REPORT DOCUMENTATION PAGE	Form Approved OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	3.Sep.03	THESIS

4. TITLE AND SUBTITLE
"PROSECUTING VIRTUAL CHILD PORNOGRAPHY IN THE 21ST CENTURY"

5. FUNDING NUMBERS

6. AUTHOR(S)
MAJ NOLTE KYLE W

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
THE GEORGE WASHINGTON UNIVERSITY

8. PERFORMING ORGANIZATION REPORT NUMBER
CI02-1277

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
THE DEPARTMENT OF THE AIR FORCE
AFIT/CIA, BLDG 125
2950 P STREET
WPAFB OH 45433

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION AVAILABILITY STATEMENT
Unlimited distribution
In Accordance With AFI 35-205/AFIT Sup 1

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

DISTRIBUTION STATEMENT A
Approved for Public Release
Distribution Unlimited

20030916 007

14. SUBJECT TERMS	15. NUMBER OF PAGES
	67
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT

ABSTRACT

for

"Prosecuting Virtual Child Pornography in The 21st Century"

by

Major Kyle W. Nolte

Child pornography involves the illicit production, distribution and possession of images depicting children engaged in sexually explicit activity. Based on several Supreme Court decisions affirming the government's right to criminalize child pornography, Congress enacted laws banning it as early as 1977. By the late 1980s, these laws had had a significant impact, forcing sexual depictions of children from adult bookstores and driving child pornographers underground. Fueled by the rapid growth of the Internet and advancing computer technology, child pornography made a comeback in the 1990s. Concerned that advancing computer graphics technology would make it possible to create life-like images of child pornography, Congress enacted the Child Pornography Prevention Act of 1996 (CPPA). The CPPA extended the definition of child pornography to include images that "appeared to be" depictions of children engaged in sexually explicit conduct. The CPPA allowed the government to convict individuals without having to prove that the child depicted was real. The Free Speech Coalition and other plaintiffs challenged the CPPA as soon as it was enacted, arguing, among other things, that the "appears to be" language was unconstitutionally overbroad. The Supreme Court ultimately agreed with the plaintiffs in *Ashcroft v. Free Speech*, finding that Congress could not ban images of children engaged in sexually explicit conduct, unless the images depicted actual children, or were legally obscene. The Supreme Court left the door open for Congress to more narrowly regulate computer-generated child pornography consistent with its decision.

The Supreme Court's decision has had a significant negative impact on the government's ability to prosecute child pornography cases. Most prosecutors will only bring charges in cases where they can prove the identity of the child depicted. This is only a fraction of the legitimate child pornography cases. Further, recent courts have required that the government prove, not only that the image depicts a real child, but also that the defendant knew the image depicted a real child. This creates a very difficult burden for the government to overcome. The government can attempt to prove that an image depicts a real child by physically locating the child, comparing the child's image to images maintained by one of several government databases, or by subjecting the image itself to a detailed technical examination. These methods are each difficult, resource intensive and not without limitation. The government can attempt to prove that a defendant knew the image was of a real child by finding circumstantial evidence indicating his predilection for real children, including evidence from his computer and Internet service provider. A sophisticated defendant can thwart the government's efforts,

however, by intentionally creating the inference that he is interested only in virtual depictions.

Faced with the Supreme Court's decision invalidating sections of the CPPA and still advancing computer technology, Congress passed the PROTECT Act of 2003 and the President signed it into law on April 30, 2003. The purpose of the PROTECT Act is to restore the government's ability to prosecute child pornography cases. The Act makes it unlawful to distribute obscene visual depictions of children, use child pornography to seduce children, and also more narrowly defines virtual child pornography as 'graphic' depictions of children that are 'virtually indistinguishable' from depictions of real children. Finally, the Act adds a new affirmative defense where a defendant can avoid conviction by proving that the images are computer-generated. The PROTECT Act was Congress' attempt to prevent defendant's from avoiding conviction by simply claiming that the images they possessed or distributed were computer-generated. The PROTECT Act is, however, vulnerable to constitutional attack. First, in banning obscene visual depictions of children, Congress failed to follow the Supreme Court's test for obscenity set out in *U.S. v. Miller*. In addition, the new affirmative defense is inadequate because it attempts to shift a very difficult evidentiary burden – that of proving whether the images depict real children – onto the defendant. The Supreme Court warned in *Ashcroft* that doing so created "serious constitutional difficulties." Thus, the Supreme Court will likely find the affirmative defense inadequate and ultimately invalidate the ban on computer-generated images.

Prosecuting Virtual Child Pornography in the 21st Century

By

Kyle Warren Nolte

B.A., June 1993, Eastern Washington University
J.D., May 1997, Gonzaga University School of Law

A Thesis submitted to

The Faculty of

The George Washington University
Law School
in partial satisfaction of the requirements
for the degree of Masters of Law

August 31, 2003

Thesis directed by

Stephen A. Saltzburg

Howrey Professor of Trial Advocacy, Litigation
and Professional Responsibility

NOTE: The views expressed in this paper are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the U.S. Government.

I. Introduction

Fueled by the rapid growth of the Internet, the sale and trade of pornography, including the illicit sale of child pornography, has become a multibillion dollar business.[1] Individuals involved in the production, sale and trade of child pornography are typically sophisticated computer users, who maintain large, organized collections of images for long periods of time. Significantly, many of the individuals involved in the child pornography trade also sexually molest children.

While the Internet provides children and teenagers with access to a great wealth of information, it also greatly increases their chance of being sexually exploited. This year, over 30 million children will use the Internet for educational and recreational purposes, and that number is expected to grow to 80 million by 2005.[2] On any given afternoon, some 20,000 pedophiles will also be on-line, roaming chat rooms frequented by young people, searching for victims to exploit.[3] Approximately 90,000 children will be sexually abused this year, and the Internet will play a significant role in their victimization.[4] In fact, if the current trend continues, at least one in five children will receive an on-line solicitation for sex, and many of these will children will be engaged in explicit and graphic conversations

---

[1] *See Threats Against The Protection of Children: Hearing Of the Crime Subcomm., of the House Judiciary Comm.*, 107th Cong. (2002) (testimony of Mr. William C. Walsh, Lieutenant of Police Youth and Family Support Division, Dallas, Texas, Police Department) available at LEXIS, Federal Document Clearing House Congressional Testimony.

[2] *See Department of Justice Program Announcement: Internet Crimes Against Children Task Force Program*, Tuesday, July 16, 2002, 67 FR 46810 (2002).

[3] *See* Ly, Phuong, *Girls Teach Teen Cyber Gab to FBI Agents*, WASH. POST, No. 181, Wednesday, June 4, 2003, page A1, A8. (interview of Baltimore, Md., FBI Special Agent In Charge, Stacey Bradley).

[4] *See Stopping Child Pornography: Hearing on S. 2520 Before the Senate Judiciary Comm.*, 107th Cong. (2002) (statement of Sen. Patrick Leahy), available at LEXIS, Federal Document Clearing House Congressional Testimony.

about sex, and be provided images of child pornography.[5] Some children will ultimately agree to meet their offender and be sexually abused and raped.

In 1977, Congress passed the first law banning child pornography. That law has been amended several times, most often in response to decisions of the Supreme Court, affirming the government's right to regulate child pornography. By the late 1980s, Congress' efforts were having a direct impact, and the child pornography trade had all but dried up, limited mostly to small, underground groups. Advances in computer technology and the rapid growth of the Internet, however, has revived the child pornography trade. Hundreds of thousands of images have been digitized and are available online. The new demand for child pornography is being met by individuals who can produce new depictions with nothing more than a digital camera and the software capable of transferring these images to a computer.

Alarmed by the resurgence of child pornography brought about by the advancing computer technology and the Internet, and concerned that advancing computer graphics technology would soon make it possible to create life-like depictions of child pornography, Congress enacted the Child Pornography Prevention Act of 1996.[6] The CPPA expanded existing definitions of child pornography to encompass, among other things, images created by using computer painting and drawing software programs that appeared to depict real children engaging in sexually explicit conduct. The expanded definition was warranted, Congress believed, because these virtual images would still whet the appetites of

---

[5] *See supra* note 1, (in 1999, one in five children ages ten to seventeen received a sexual solicitation over the Internet, and one in thirty-three were asked to meet, called on the phone or sent mail, money or gifts).

[6] Pub. L. 104-208, 110 Stat. 3009 (1996) (codified as 18 U.S.C. § 2251, et seq.,) (hereinafter CPPA).

pedophiles, would still be used to seduce children and because the "virtual" images threatened to thwart the government's ability to prosecute cases of real child pornography.

Shortly after the CPPA was enacted, *The Free Speech Coalition, et. al.,* brought a facial challenge, arguing, among other things, that the "appears to be" language was vague, overbroad and chilled constitutionally protected speech. The plaintiff's asserted that the language of the CPPA improperly included depictions made using youthful-looking adults, and computer-generated simulations, both of which, it argued were protected speech. The trial court granted summary judgment for the government, however, the Ninth Circuit reversed. In April of 2002, a majority of the Supreme Court affirmed, invalidating two definitional sections of the CPPA, including the "appears to be" language. The majority found that the CPPA went beyond it's prior holding in *United States v. Ferber,*[7] because it included images that did not depict the actual abuse of children, and it also failed to follow the test for obscenity set out in *Miller v. California.*[8] The Court rejected the government's argument that numerous other governmental interests warranted banning "virtual" child pornography. The Court did leave the door open for Congress to more narrowly proscribe computer-generated images if, in the future, technology makes it impossible for the government to distinguish between the two, and if Congress were to include an adequate affirmative defense.[9]

---

[7] United States v. Ferber, 458 U.S. 747, 73 L. Ed. 2d 1113, 102 S. Ct. 3348 (1982)

[8] Miller v. California, 413 U.S. 15, 37 L. Ed. 2d 419, 93 S. Ct. 2607 (1973).

[9] Ashcroft, et. al., v. The Free Speech Coalition, et. al., 535 U.S. 234, L. Ed. 2d 122 S. Ct. 1389, (2001) (hereinafter *Ashcroft*).

On the day the ruling was announced, Attorney General Ashcroft condemned it, saying it will make the government's attack on child pornography "immeasurably more difficult."[10] The Attorney General's prediction was generally accurate. Since *Ashcroft,* the number of individuals indicted for child pornography offenses has dropped precipitously.[11] This is because, based on *Ashcroft*, the government must now establish that the child in each depiction is a real child. Further, a recent court has required the government to establish that the defendant *knew* the children depicted were real. Establishing that an image depicts an actual child is a difficult task, requiring significant investigative resources. Establishing that the offender *knew* that an image was real and not computer-generated when he or she received, possessed or transmitted the image may be an impossible burden for the government to meet. Faced with the *Ashcroft* decision and the continuing advance of computer technology, Congress went back to the drawing board, attempting to craft legislation that would prohibit virtual child pornography, and satisfy the Court's concerns from *Ashcroft*.

On 30 April, 2003, President Bush signed into law the PROTECT Act of 2003.[12] The Act amends several existing laws aimed at protecting children by banning computer-generated images that are graphic depictions of children engaged in sexually explicit conduct and that are indistinguishable from real images to the ordinary observer, prohibits

---

[10] *See Not Real? Not Porn: First Amendment Protects 'Virtual' Images, Kennedy Writes*, ABA JOURNAL, June 2002, 88 A.B.A.J. 34.

[11] *See Child Pornography and Child Abduction Prevention: Hearing of the Crime, Terrorism, and Homeland Security Subcomm., of the House Judiciary Comm.,* 108th Cong., (March 11, 2003) (testimony of Daniel B. Collins, Associate Deputy Attorney General, Department of Justice)

[12] The PROTECT Act of 2003, Pub. L. 108-21, 117 Stat. 650 (2003).

providing virtual images to children in an effort to seduce them, and criminalizes the distribution, receipt or possession of obscene representations of children engaged in sexually explicit activity.

This paper briefly presents the problem that child pornography poses, and reviews the applicable child pornography statutes and the case law existing prior the *Ashcroft* decision. It next examines the *Ashcroft* decision and sets out the Court's requirements for regulating depictions of child pornography, as well as, the impact of those requirements upon the government's ability to successfully prosecute child pornography cases. It presents several cases addressing the issue of computer-generated images since *Ashcroft*, and the new knowledge requirements those courts have imposed. It then discusses ways in which the government can meet these new requirements, including an examination of the technology available to law enforcement to determine whether an image is real, and how the government can attempt to prove that the defendant knew the image depicted real children. Finally, it analyzes the PROTECT Act, including its vulnerabilities to constitutional attack in the courts.

II. Child Pornography – The Problem

The United States is the largest consumer of child pornography in the world.[13] Currently, hundreds of thousands of pornographic images of children can be easily obtained, often without charge, by anyone with access to the Internet. The individuals who

---

[13] *See supra* n.1.

purchase, collect and trade child pornography often have collections consisting of hundreds, thousands, tens of thousands, and in some cases, even hundreds of thousands of images.[14] Their collections are often highly organized into albums, directories and subdirectories, and maintained for period of months or years.[15] These individuals are typically intelligent, reasonably-sophisticated computer users, who may work in the computer technology industry,[16] and may also volunteer in groups that work with children.[17] Further, many of the individuals discovered with child pornography have previously molested children.[18] To date, federal authorities have apprehended and convicted several thousand of these individuals.[19] This is only a fraction of the individuals participating in the sexual exploitation of children.

---

[14] United States v. Holm, 326 F.3d 872 (7th Cir. 2003) (defendant had more than 100,000 pornographic images on his home computer, 10 to 20% of which were of children); United States v. Tucker, 150 F. Supp. 2d 11263, 2001 U.S. Dist. LEXIS 14605 (D. Utah 2001)(defendant admitted to having over 5,000 images of children between the ages of ten and twelve engaged in sexual acts and poses; forensic examiner found approximately 27,000 images); United States v. Tampico, 297 F.3d 396 (5th Cir. 200) (defendant used U-haul to transport child pornography, including photographs, Polaroids, videotapes, slides and computer hard drive and computer disks); United States v. Guagliardo, 278 F.3d 868 (9th Cir. 2002) (defendant provided undercover officer with three computer Zip disks containing pornographic images of preadolescent girls, and claimed to have collected 7,500 images and 105 movies of pre-teen child pornography) *cert denied*, Guagliardo v. United States 2002 U.S. LEXIS 8139 (U.S. Nov. 4, 2002); United States v. Tynes, 2003 CCA LEXIS 101 (A. Ct. Crim. App. Apr. 15, 2003) (Harvey, S.J.) (search of residence discovered hundreds of diskettes containing child pornography); United States v. Latorre, 2002 CCA LEXIS 97 (unpublished) (A.F. Ct. Crim. App. Apr. 3 2002) (search of residence discovered over five thousand images of child pornography) *pet for rev filed*, United States v. Latorre, 57 M.J. 459 (C.A.A.F. 2002); *See supra* n.11, (testimony of Collins included reference to Yale Professor who possessed over 150,000 images of child pornography).

[15] *See* United States v. Hay, (2000 CA9 Wash) 321 F.3d 630, 200 DCOS 8586, 2000 Daily Journal DAR 11353; United States v. Tynes, 2003 CCA LEXIS 101 (A. Ct. Crim. App. Apr. 15, 2003) (Harvey, S.J.).

[16] *See* United States v. Holm, 326 F.3d at 874 (defendant worked as an information systems technologist).

[17] *See* United States v. Tampico, 297 F.3d at 403 (defendant "took advantage" of the Big Brother Program for "his own sexual depravity"); United States v. Latorre, *supra* n.14, (accused coached soccer team of five year-old female who he photographed himself raping and sodomizing).

[18] United States v. Tampico, 297 F.3d at 398; United States v. Latorre, *supra* n.14; *See infra* nn.24-26.

[19] *See Washington Post Live Online, Online Interview with FBI Baltimore Field Office Special Agent in Charge, Stacey Bradley*, WASHINGTON POST ONLINE, June 4, 2003 (since Operation Innocent Images began in the 1997, some 2,400 individuals have been apprehended).

Child pornographers are typically only discovered by trading or selling images on-line to undercover law enforcement agents, by attempting to meet whom they believe to be a minor for purposes of engaging in sexual activities,[20] and through investigations initiated based upon a victim or parental complaint made to law enforcement entities or to the National Center for Missing and Exploited Children.[21] A small number are also discovered by computer repair services, who contact law enforcement agencies.[22] The individuals apprehended for meeting, or attempting to meet children in order to engage in sexual activity, often arrive armed with digital cameras or other video recording equipment, fully prepared to record their crimes.[23]

Some believe there is a clear link between those who trade in child pornography and those who sexually abuse children.[24] In a recent Bureau of Prisons study, over three-

---

[20] United States v. Tynes, 2003 CCA LEXIS 101 (A. Ct. Crim. App. Apr. 15, 2003) (Harvey, S.J.) (accused apprehended by FBI in front of hotel where he was to meet whom he believed was a minor to engage in sexual relations); United States v. Latorre, *supra* n.14, (accused was apprehended in shopping mall attempting to meet whom he believed was a fourteen year-old female to engage in sex); United States v. Pearl, 89 F. Supp. 2d 1237 (D. Utah, 2000) (accused was apprehended at airport after traveling to meet who he thought was a twelve year-old girl for sex) *aff'd in part and rev'd and remanded on other grounds,* 324 F.3d 1210 (10th Cir. 2003).

[21] *See On Virtual Child Pornography: The Impact of The Supreme Court Decision in The Case of Ashcroft Versus The Free Speech Coalition: Hearing of the Crime, Terrorism, and Homeland Security Subcomm., of the House Judiciary Comm.*, 107th Cong. (2002) (testimony of Mr. Ernest E. Allen, President and Chief Executive Officer, National Center for Missing and Exploited Children) (the NCMEC is the nation's clearing house for complaints of child pornography and sexual solicitation of minors) available at LEXIS, Federal Document Clearing House Congressional Testimony.

[22] *See* United States v. Vig, 167 F.3d 443, (8th Cir. 1999) *cert denied*, 1999 LEXIS 5632 (Oct. 4, 1999).

[23] United States v. Tynes, 2003 CCA LEXIS 101 (A. Ct. Crim. App. Apr. 15, 2003) (Harvey, S.J.) (accused brought a video camera to hotel room to record his anticipated sexual activities with minor); United States v. Latorre, *supra* n.14, (accused had digital camera when apprehended for trying to meet whom he believed was a fourteen year-old and had camera previously used to record himself raping and sodomizing five year-old female).

[24] *See On Virtual Child Pornography: The Impact of The Supreme Court Decision in The Case of Ashcroft Versus The Free Speech Coalition: Hearing of the Crime, Terrorism, and Homeland Security Subcomm., of the House Judiciary Comm.*, 107th Cong. (2002) (testimony of Mr. Michael J. Heimbach, Unit Chief, Crimes Against Children Unit, Federal Bureau of Investigation; testimony of Mr. Ernest E. Allen, President and Chief Executive Officer, National Center for Missing and Exploited Children; and,

quarters of the prisoners convicted of one or more child pornography offenses, or for traveling to meet a minor for sex, admitted that they had previously molested children, and in many cases had molested multiple victims.[25] Surprisingly, the number of undetected sex crimes against children was "significantly higher" for those convicted of child pornography offenses, than it was for those convicted of actually traveling to meet a minor for sex.[26] Of the sixty-two offenders who agreed to participate in the study, forty-nine were convicted of child pornography offenses, but were responsible for a majority of the 1,433 victims.[27] In addition to the actual rape and sexual abuse of a child, child pornography creates a permanent record of the child's victimization, additional images for child pornography collections and, and is often used by child molesters to "recruit, seduce and control" future victims.[28] Child pornography is used break down inhibitions, making a child believe that sex between children, or between children and adults, is normal. Once the child has become a victim, the molester uses the threat of disclosing the photographs or video recording to maintain the child's silence.[29] In addition to adding these new images to his collection, the child pornographer can then sell these new images, or trade them for other new images. These new images become a permanent fixture in the underground world of

---

testimony of Mr. William C. Walsh, Lieutenant of Police, Youth and Family Support Division, Dallas, Texas, Police Department) available at LEXIS, Federal Document Clearing House Congressional Testimony.

[25] *Id.* (Heimbach testimony, citing study conducted by Dr. Andres Hernandez, Director of Sex Offender Treatment Program of the Bureau of Prisons; of the sixty-two offenders convicted, seventy-six percent admitted prior sexual abuse of children, involving a combined 1,433 victims).

[26] *Id.*

[27] *Id.*

[28] *See supra* n.11.

[29] *Id.*

child pornography and, in the future, will likely be used to seduce and sexually exploit other children. Thus, the cycle continues.

Apprehending those who produce, disseminate and possess child pornography is a very difficult task. Investigations require specialized expertise, including specially trained undercover investigators, sufficiently familiar with the unique language that teenagers use to converse online,[30] as well as trained and experienced forensic examiners, capable of extracting needed evidence from a defendant's computer media. In addition, conducting such investigations requires investing in significant and expensive computer equipment, including machines capable of recording e-mail messages and chat correspondence. The Internet knows no geographical boundaries, and thus, these investigations, to be successful, require close coordination and cooperation among local, state and federal authorities. Finally, monitoring an individual's activities online often runs into various property and privacy rights. For these reasons and others discussed below, federal authorities have, to date, apprehended only a small fraction of those responsible for producing depictions of child pornography by recording the rape and sexual abuse of children, or those responsible for providing the market for such depictions, by selling, trading and collecting them.

---

[30] *See* Ly, Phuong, *supra* n.3.

III. Current Law

A. History of Child Pornography Law

In 1973, the Supreme Court decided the seminal obscenity case of *U.S. v. Miller.*[31] In *Miller*, the Court abandoned its previous standard for obscenity[32] and set out the current three-part test, which provides the following guidelines:

> (a) whether the average person applying contemporary community standards would find that the work, taken as a whole, appeals to the prurient interest;
>
> (b) whether the work depicts or describes, in a patently offensive way, sexual conduct specifically defined by the applicable state law; and
>
> (c) whether the work, taken as a whole, lacks serious literary, artistic, political, or scientific value.[33]

The Court vacated the lower courts decision and remanded in order for that court to reconsider in light of the new test.[34] Writing for the majority, Chief Justice Warren Burger, explicitly rejected the *Memoirs* requirement that obscene material be "utterly without redeeming social value," replacing it with a lower standard of lacking "serious literary, artistic, political, or scientific value."[35] The requirement from *Memoirs,* he wrote, created

---

[31] Miller, 413 U.S. 15, 37 L. Ed. 2d 419, 93 S. Ct. 2607 (1973).

[32] *See* United States v. Roth, 354 U.S. 476 (1957) and A Book Named "John Cleland's Memoirs of A Woman of Pleasure v. Attorney General of the Commonwealth of Massachusetts, 383 U.S. 413, 16 L. Ed. 2d 1, 86 S. Ct. 975 (1966) (plurality opinion) (the Court developed the Roth-Memoirs standard from the two cases, whereby the test for obscenity required that: (a) the dominant theme of the material taken as a whole appeals to the prurient interest in sex; (b) the material is patently offensive because it affronts contemporary community standards relating to description or representation of sexual matters; and (c) the material is utterly without redeeming social value.").

[33] Miller, 413 U.S. at 24.

[34] *Id.* at 36.

[35] *Id* at 22.

"a burden virtually impossible [for prosecutors] to discharge under our criminal standards of proof."[36] In addition, Justice Burger rejected the national community standards set out in *Jacobellis v. Ohio,*[37] allowing the finder of fact to apply the standards of the local community.[38] On this note he said: "It is neither realistic or constitutionally sound to read the First Amendment as requiring that the people of Maine or Mississippi accept public depiction of conduct found tolerable in Las Vegas or New York City."[39] In addition to replacing two elements of the standard for obscenity, the Court added a limitation that the obscenity to be left unprotected the by the First Amendment, must be specifically laid out by the state statute. This purpose of this requirement was to give fair notice to those who deal in such material of when they would be subject to prosecution.[40] Justice Burger provided examples of what conduct a state could regulate: Patently offensive representations or descriptions of ultimate sexual acts, normal or perverted, actual or simulated; and Patently offensive representations or descriptions of masturbation, excretory functions, and lewd exhibition of the genitals.[41] In a subsequent case,[42] the Court noted that the state statutes could not define the local community standards. State statutes can be "evidence of the mores of the community," but the jury retains the discretion to determine

---

[36] *Id.*

[37] *Id.* at 30, (citing Jacobellis v. Ohio, 378 U.S. 184, 12 L. Ed. 2d 793, 84 S. Ct. 1676 (1964)).

[38] *Id.*

[39] *Id.* at 32.

[40] *Id.* at 27.

[41] *Id.* at 25.

[42] *See* Smith v. United States, 431 U.S. 291 (1977).

on its own what is obscene.[43] The standard enumerated in *Miller* provided a concrete definition of obscenity, but it did not provide any additional protection to children from obscenity and pornography.

Following *Miller,* Congress enacted the first federal statute specifically prohibiting the sexual exploitation of children as the Protection of Children Against Sexual Exploitation Act of 1977.[44] The Act, which has since been amended at least ten times, was based upon Congress' findings that prostitution and child pornography were organized and profitable ventures, which victimized countless child victims.[45] This initial statute prohibited using a minor to engage in sexually explicit conduct for the purpose of producing a visual depiction of such conduct with the knowledge that it would be transported in interstate or foreign commerce.[46] This first statute was not without problems and by 1986 only one person had been convicted under the Act.[47]

In 1982, the Court decided *New York v. Ferber.*[48] Here, the Court held upheld a New York statute prohibiting the sale of pornography depicting children under sixteen, whether or not the depiction was otherwise obscene. Emphasizing the states' compelling interest in protecting children who may be exploited in the manufacture of child pornography, the Court held that states have greater latitude in prohibiting pornographic

---

[43] *See* Id. at 303.

[44] Pub. L. No 95-225, 92 Stat. 7 (1977) (codified as 18 U.S.C. §§2251-2253).

[45] S. Rep. No 95-438 (1977).

[46] *Id.*

[47] *See Attorney General's Commission On Pornography, Final Report* 604 (1986).

[48] 458 U.S. 747, 73 L. Ed. 2d 1113, 102 S. Ct. 3348 (1982).

depictions of children than similar depictions of adults.[49] Where images involve depictions of children, the finder of fact "need not find that the material appeals to the prurient interest of the average person; it is not required that sexual conduct portrayed be done so in a patently offensive manner; and the material at issue need not be considered as a whole."[50] The Court warned, however, that material that that did not involve depictions of the live performance of sexual acts by children was still entitled to First Amendment protection.[51]

Congress took advantage of the Court's decision in *Ferber* and enacted several subsequent statutes to expand the prohibitions on materials involving actual children involved in sexually explicit conduct. First, based upon the Court's main finding in *Ferber,* Congress removed the requirement from the statute that the prohibited materials must also be obscene under *Miller*.[52] Next, Congress removed the requirement that child pornography be produced or distributed for the purpose of sale, allowing for the prosecution of non-commercial traffickers.[53] In addition, Congress raised the age limit for protecting children involved in the production of child pornography from sixteen to eighteen[54] and, based on language from *Ferber*, changed the language "visual or print medium" to "visual depiction."[55] In order to make it clear that depictions of children engaged in sexually explicit conduct were prohibited, even if they did not meet the adult

---

[49] Ferber, 458 U.S. at 756-57.

[50] *Id.* at 764.

[51] *Id.* at 764-65.

[52] *See* Child Protection Act of 1984, Pub. L. No. 98-292, 98 Stat. 204 (1984) (codified as amended at 18 U.S.C. §§ 2251-2253) at §4.

[53] *See* Id. at § 4,5.

[54] *See* Id. at § 5.

obscenity standard, Congress changed "lascivious" to "lewd" in the definition of "sexual conduct."[56] Congress also expressly prohibited the use and production of advertisements for child pornography,[57] and made defendants liable for personal injuries resulting from the production of child pornography.[58] Finally, Congress made illegal the use of computers to transport, receive or distribute child pornography,[59] prohibited the buying and selling of children or the temporary custody of them for purposes of producing child pornography,[60] and required producers of certain sexually explicit matter to maintain records concerning the age of actors and to disclose the age.[61]

In 1990, the Court addressed the constitutionality of a state statute banning the mere possession of child pornography in *Osborne v. Ohio*.[62] Osborne was convicted under Ohio's child pornography statute of possessing child pornography. There was no evidence that Osborne had produced or distributed the depictions. Based on the Court's earlier decision in *Stanley v. Georgia,*[63] Osborne claimed on appeal that his conviction for merely personal, private possession of child pornography violated his First Amendment rights. The Court, again emphasizing the states compelling interest in prohibiting the sexual

---

[55] *See* Id. at §§ 3,4.

[56] *See* Id. at § 5.

[57] *See* Child Sexual Abuse and Pornography Act of 1986, Pub. L. No. 99-628, § 2, 100 Stat. 3510 (1986) (codified as amended at 18 U.S.C. § 2251).

[58] *See* Child Abuse and Victim's Rights Act of 1986, Pub. L. No. 99-500, 100 Stat. 1783 (1986).

[59] *See* Child Protection and Obscenity Enforcement Act of 1988, Pub. L. No. 100-690, 102 Stat. 4181 (1988) (codified as amended at 18 U.S.C. §§ 2251A-2252). § 7511.

[60] *See* Id. at § 7512.

[61] *See* Id. at § 7513.

[62] 495 U.S. 103, 109 L. Ed. 2d 98, 110 S. Ct. 1691 (1990).

exploitation of children, accepted Ohio's argument that the most efficient way to discourage the production of these materials was to dry-up the market for them, and this could be accomplished by criminalizing possession.[64] Following *Osborne,* Congress enacted further statutes, banning the possession of three or more matters of child pornography.[65] Finally, in 1994, Congress prohibited the production and importation of sexually explicit depictions of minors,[66] and provided for restitution for victims of child pornography.[67] From the enactment of the original statute in 1977, to the 1994 amendments, Congress consistently addressed depictions involving real children. As Judge Molloy wrote in the Ninth Circuit's opinion in *Ashcroft*: "The legislation tracked the decisions of the Supreme Court as well as the swift development of technology and its nearly infinite possibilities. The statutory odyssey was from adult porn secured or not by the First Amendment, to child pornography permitted or not, to pseudo-child pornography protected or not, until in 1996 the law was amended to prohibit virtual child pornography."[68]

---

[63] 394 U.S. 557, 22 L. Ed. 2d 542, 89 S. Ct. 1243 (1969) (holding that a may not ban the private possession of obscenity).

[64] Osborne, 495 U.S. at 110-11.

[65] *See* Child Protection Restoration and Penalties Enforcement Act of 1990, Pub. L. No 101-647, § 301, 323, 104 Stat. 4789 (1990) (codified as amended at 18 U.S.C. § 2252(a)(4).

[66] *See* Pub. L. No. 103-322, § 16001, 108 Stat. 2036 (1994) (codified as amended at 18 U.S.C. § 2259).

[67] *See* Id. at § 40113.

[68] Free Speech v. Ashcroft, 198 F.3d at 1089.

B. The Child Pornography Prevention Act of 1996

Following *Ferber* and the Court's decision that child pornography, like obscenity, was without First Amendment protection, aggressive campaigns by federal Customs and Postal service investigators greatly reduced child pornography in the United States.[69] Child pornographers, forced underground by the Court's decision, dealt mostly in recycled magazines photos, Polaroid photos, or photos they could develop themselves.[70] Each of these materials were difficult to obtain, create and circulate. The advent of the home personal computer, and the Internet changed all of that. Throughout the late 1990s, the "combination of digital photography and high-speed Internet access" began what many authorities described as an explosion of homemade child pornography, with increasing numbers of victims.[71] As early as 1987, defendants began challenging the prosecution to establish not only that the alleged images contained minors, but that they depicted real children.[72] In *United States v. Nolan,*[73] the defendant argued "that modern technology can create images so similar to a human being that it would be difficult to decipher what they are just by looking at them."[74] On appeal, the Eighth Circuit held there was sufficient evidence that the images were real where the jury was able to view the images and draw their own conclusions, where a government expert testified that all but one of the images

---

[69] Lee, Jennifer, *High Tech Helps Child Pornographers and Their Pursuers*, N.Y. TIMES, February 9, 2003.

[70] *Id.*

[71] *Id.*

[72] United States v. Nolan, 818 F.2d 1015 (1st Cir. 1987).

[73] *Id.*

[74] *Id.* at 1019.

"was a minor."[75] The court found the claim that the images were computer-generated "speculative," and that the defense neither challenged the government expert nor offered its own expert that the images were other than real children.[76] This case, however, made Congress aware that the potential existed for defendants to raise the "virtual" image defense and thereby defeat an otherwise legitimate child pornography prosecution.

By 1995, Congress was holding hearings on the rapid growth of child pornography on the Internet, and the advancing graphics technology that allowed computer users to manipulate digital images and to create virtual images. Congress learned that the technology existed, or would soon exist, that made it possible to create images of children on a computer that were "virtually indistinguishable" from actual photographs.[77] This technology, Congress believed, posed a "clear and present danger" to society because the lifelike images would fuel the appetites of those who molest children, be used to seduce and exploit children, and significantly impede the government's ability to prosecute cases of real child pornography.[78] Based on these concerns, Congress enacted the Child Pornography Prevention Act of 1996.[79] The CPPA was Congress' attempt to criminalize computer-generated depictions of children engaged in sexually explicit conduct that could easily be mistaken for depictions of real children.[80] To that end, Congress added three

---

[75] *Id.* at 1020.

[76] *Id.* at 1019-20.

[77] 141 Cong. Rec. S13542 (daily ed. Sept. 13, 1995) (remarks of Sen. Hatch).

[78] *Id.*

[79] *See supra* n.7.

[80] Silvergate, Harvey, A, *Kid-Porn Law Goes Too Far*, THE NATIONAL LAW JOURNAL, March 19, 2001, p.A33.

subsections to the definition section the CPPA. These new definitions included criminalizing visual depictions, including computer-generated images that appear to be of a minor engaging in sexually explicit conduct,[81] images of identifiable minors which have been altered to make it look like they are engaged in sexually explicit conduct,[82] and sexually explicit images that are "advertised, promoted, presented, described, or distributed in such a manner that conveys the impression" that it depicts "a minor engaging in sexually explicit conduct."[83] In 1998, Congress added a third jurisdictional nexus to interstate commerce, linking the use of the materials that had mailed or moved in interstate commerce,[84] and reduced the number of images necessary to one or more matters of child pornography.[85]

Thus, at the time of *Ashcroft,* the CPPA criminalized the sale, distribution, receipt and possession of child pornography that had traveled in interstate commerce, or had been produced with materials that traveled in interstate commerce.[86] Child pornography was defined as "any visual depiction, including any photograph, film, video, picture, or computer or computer-generated image or picture, whether made or produced by electronic, mechanical or other means, of sexually explicit conduct, where –

---

[81] 18 U.SC. § 2256(8)(B).

[82] 18 U.S.C. § 2256(8)(C).

[83] 18 U.S.C. § 2256(8)(D).

[84] Pub. Law. 105-314, § 202(a), 112 Stat. 2977(1998) (codified as amended as § 2252(a)(4)(B); *But See* United States v. McCoy, 323 F.3d 1114, (9th Cir. 2003) (held for defendant that travel of materials used to produce photographs, without more, is insufficient nexus and unconstitutional application of statute).

[85] *Id.* § 203(a).

[86] 18 U.S.C.A. § 2252A (2000).

> (A) the production of such visual depiction[87] involves the use of a minor[88] engaging in sexually explicit conduct[89];
>
> (B) such visual depiction is, or appears to be, of a minor engaging in sexually explicit conduct;
>
> (C) such visual depiction has been created, adapted, or modified to appear that an identifiable minor is engaging in sexually explicit conduct; or
>
> (D) such visual depiction is advertised, promoted, presented, described, or distributed in such a manner that conveys the impression that the material is or contains a visual depiction of a minor engaging in sexually explicit conduct.[90]

The penalties for violating the chapter included fines and prison terms ranging from five to ten years for simple possession, to fifteen to thirty years for sale or distribution.[91] In addition, the statute provides for the criminal and civil forfeiture of any images, as well as profits and any real or personal property used to commit the offense.[92] The CCPA provided two affirmative defenses. A defendant charged with possession could avoid conviction by showing that he "(1) possessed less than three images of child pornography; and (2) promptly and in good faith, and without retaining or allowing any person, other than a law enforcement agency, to access any image or copy thereof – (A) took reasonable steps to destroy each such image; or (B) reported the matter to a law enforcement agency

---

[87] 18 U.S.C. § 2256(5) (a "visual depiction includes undeveloped film and videotape, and data stored on computer disk or by electronic means which is capable of conversion into a visual image").

[88] 18 U.S.C. § 2256(1) (a "minor" is defined as a person under the age of eighteen years).

[89] 18 U.S.C. § 2256(2) ("sexually explicit conduct means actual or simulated: (A) sexual intercourse, including genital-genital, oral-genital, anal-genital, or oral-anal, whether between persons of the same or opposite sex; (B) bestiality; (C) masturbation; (D) sadistic or masochistic abuse; or (E) lascivious exhibition of the genitals or pubic area of any person").

[90] 18 U.S.C. § 2256(8).

[91] 18 U.S.C. § 2252A(b)(1),(2).

and afforded that agency access to each such image.[93] A defendant charged with the other offenses, could avoid conviction by establishing that the depictions were produced using and adult, and that they were not advertised or promoted as depictions of children.[94]

Thus, the CPPA prohibited computer-generated images that did not depict real children, but which appeared "virtually indistinguishable" from real images of children engaged in sexually explicit conduct. Prior to *Ashcroft,* several circuits had upheld the constitutionality of the CPPA.[95]

C. The Free Speech Decision

Following the enactment of the CPPA, including the proscription on computer-generated images, *The Free Speech Coalition, et al.*, brought a facial challenge to the statute in the United States District Court for the Northern District of California.[96] The plaintiffs included a trade association of businesses involved in producing and distributing adult-oriented materials, the publisher of a book dedicated to nudism; a New York artist whose works included large-scale nudes and a professional photographer of nudes and erotic works.[97] The plaintiffs, who withheld distributing

---

[92] 18 U.S.C. § 2253(a).

[93] 18 U.S.C. § 2252A(d).

[94] 18 U.S.C. § 2252A(c).

[95] *See* United States v. Fox, 248 F.3d 394, (5th Cir. 2001); United States v. Mento, 231 F.3d 912 (4th Cir. 2000); United States v. Acheson, 195 F.3d 645, (11th Cir. 1999); and United States v. Hilton, 167 F.3d 61 (1st Cir.) *cert denied* 528 U.S. 844, 145 L. Ed. 2d 98, 120 S. Ct. 115 (1999).

[96] The Free Speech Coalition, et. al., v. Reno, 1997 U.S. Dist. LEXIS 12212, No. C 97-0281 VSC, 1997 WL 487758 (N.D. Cal. Aug. 12, 1997) (Samuel Conti, J.) (unpublished).

[97] Free Speech Coalition, et. al., v. Reno, 198 F.3d 1083, 1086, (9th Cir. 1999) (hereinafter Free Speech v. Reno).

their works out fear of prosecution, sought declaratory judgment and injunctive relief in a pre-enforcement challenge to subsections (8)(B) and (D) of the CPPA.[98] Specifically, the plaintiff's complained that the phrase "appears to be" from (8)(B) and "conveys the impression from (8)(D), were unconstitutionally vague and overbroad, and constituted an improper prior restraint of speech by creating a permanent chill on protected expression. Both parties moved for summary judgment.[99] The district court found that subsections (8)(B and (D) were content-neutral regulations, not intended to regulate ideas, but instead regulate the "secondary effects of the child pornography industry, specifically the exploitation and degradation of children."[100] These included "the encouragement of pedophilia and the molestation of children."[101] Because the district court determined the regulations content-neutral, the government was not required to show a compelling interest served by the provisions. The district court also found that the subsections were not vague or overbroad and therefore, that the CPPA was not an improper prior restraint of speech. Thus, finding the CPPA constitutional, the district court granted the government's motion for summary judgment, and at the same time, denied plaintiff's cross motion for summary judgment.[102] Based on the district court's adverse ruling, *The Ashcroft Coalition* appealed.[103]

---

[98] *Id.*

[99] *Id.*

[100] *Id.*

[101] *Id.*

[102] *Id.*

[103] *Id.*

On appeal, the Ninth Circuit reversed. First, the court disagreed that the CPPA was content-neutral. Instead, the court, citing *United States v. Hilton*,[104] found the CPPA content-based because "it expressly aims to curb a particular category of speech,...by singling out the expression based on its content and then banning it." Having found the CPPA content-based, the court found the CPPA presumptively unconstitutional.[105] The court then sought to determine whether government could establish a compelling interest served by the statute and whether the CPPA was narrowly tailored to fulfill that interest. In this analysis, the court first examined three compelling state interests in banning child pornography involving images of actual children. These interests included preventing the actual sexual abuse of children, the fact that such images whet the appetites of pedophiles, and that such images are "morally and aesthetically repugnant."[106] The court found that because computer-generated images do not involve or harm any children in the process, Congress had no compelling interest in regulating them and thus, that the CPPA was unconstitutionally overbroad.[107] Additionally, the court held that the two subsections were vague, because they failed to "give the person of ordinary intelligence a reasonable opportunity to know what is prohibited,"[108] and failed to provide explicit standards, leaving law enforcement "to exercise their discretion, subjectively, about what "appears to be" or

---

[104] *Id.* at 1090, (citing United States v. Hilton, 167 F.3d 61, 68-69, (1st Cir. 1999), *pet for cert filed*, No. 98-9647 (U.S. May 28, 1999)).

[105] *See* Id. (citing Crawford v. Lungren, 96 F.3d 380, 385, (9th Cir. 1996)).

[106] *Id.* at 1091.

[107] *Id.* at 1092.

what "conveys the impression" of prohibited material."[109] Finally, the court found that the CPPA was not an improper prior restraint on speech, because it did not require advance approval for the dissemination of adult pornography that does not contain minors and was not a complete ban on constitutionally protected material.[110] The United States requested a rehearing and a rehearing *En Banc*, both of which were denied.[111] The United States appealed and the Supreme Court granted certiorari.[112]

The U.S. Supreme Court affirmed. Justice Kennedy, writing for the majority[113] recognized that "Congress may pass valid laws to protect children from abuse,"[114] but that the mere "prospect of crime, however, does not justify laws suppressing protected speech."[115] The Court found that the CPPA was inconsistent with *Miller* because it extended to depictions of minors engaged in sexually explicit conduct, without regard to the *Miller* requirements, and that it went beyond *Ferber* by banning speech that is not the product of child sexual abuse. The Court determined that the CPPA banned any depiction of sexually explicit activity involving a minor, no matter how it was presented, whether or not it was patently offensive and whether or not it lacked serious

---

[108] *Id.* at 1095, (citing Grayned v. City of Rockford, 408 U.S. 104, 108-09, 33 L. Ed. 2d 222, 92 S. Ct. 2294 (1972)).

[109] *Id.* at 1096.

[110] *Id.* at 1096-97.

[111] *See* Ashcroft, et. al., v. The Free Speech Coalition, et. al., 2000 U.S. App. LEXIS 17718.

[112] *See* Ashcroft, et. at., v. The Free Speech Coalition, et. al., 531 U.S. 1124, 148 L. Ed. 2d 788, 121 S. Ct. 876 (2001) (Mem.)

[113] *See* Ashcroft, *supra* n.9, 122 S. Ct. 1389, (Justices Stevens, Souter, Ginsburg and Breyer joined. Justice Thomas filed an opinion concurring in the judgment. Justice O'Connor filed an opinion concurring in the judgment in part and dissenting in part, in which Chief Justice Rehnquist and Justice Scalia joined as to part II. Chief Justice Rehnquist filed a dissenting opinion in which Justice Scalia joined in part).

[114] *Id.* at 1399.

literary, artistic, political, or scientific value.[116] It found that depictions of minors engaging in sexually explicit activity "do not in every case contravene community standards," and that, the idea of teenagers engaged in sexual activity, is not only a fact of modern society, but has been a theme in the arts throughout history.[117] In sum, "the CPPA cannot be read to prohibit obscenity, because it lacks the required link between its prohibitions and the affront to community standards prohibited by the definition of obscenity."[118]

The majority likewise rejected the government's claim that based on *Ferber*, Congress could ban images "virtually indistinguishable" from child pornography, without regard to *Miller*. According to the majority, *Ferber* upheld New York's statute because the sale and distribution of child pornography were "intrinsically related" to the sexual abuse of children in two ways: the images served as a permanent record of the abuse and because the sale and distribution were economic motives for its production.[119] Unlike the New York statute at issue in *Ferber*, the CPPA prohibits speech that "records no crime and creates no victims by its production.[120] *Ferber* "did not hold that child pornography is by definition without value," the Court said.[121] In

---

[115] *Id.*

[116] *Id.* at 1400.

[117] *Id.* (the Court referred to William Shakespeare's *ROMEO AND JULIET*, and the movies *TRAFFIC*, and *AMERICAN BEAUTY*, as examples of literary works that explored themes that potentially fell within the CPPA's prohibitions).

[118] *Id.* at 1401.

[119] *Id.*

[120] *Id.* at 1402.

[121] *Id.*

fact, "some works in this category might have significant value."[122] Finally, the Court held, *Ferber* relied on non-obscene, virtual images, as "an alternative and expressive means of expression."[123] Thus, *Ferber* provided no authority for the CPPA, because the CPPA, by banning all virtual images, criminalized the very alternative expression that *Ferber* approved.

The Court recognized, but dismissed the government's claims that child pornography can "rarely," if at all, be valuable speech, and that significant indirect harms to children warranted a ban on computer-generated child pornography. These harms, the government warned, included that virtual images would be used to seduce children, whet the appetites of pedophiles encouraging sexual abuse, promote the market for real images, and make prosecuting cases of real child pornography more difficult. The Court rejected the government's claim that banning virtual child pornography was necessary because pedophiles may use it to seduce children because, while the government is free to prosecute those who provide unsuitable materials to children,[124] they may not ban speech that adults have a right to receive in an attempt to keep it from children. The Court also rejected the argument that virtual images would whet the appetites of pedophiles. While such visual depictions may whet the appetites of pedophiles, the "mere tendency of speech to encourage unlawful acts is not sufficient reason for banning it,"[125] and thus, "the government may not prohibit speech because it

---

[122] *Id.*

[123] *Id.*

[124] *Id.* at 1402, (citing Ginsberg, v. New York, 390 U.S. 629, 20 L. Ed. 2d 195, 88 S. Ct. 1274 (1968)).

[125] *Id.* at 1403, (citing Stanley v. Georgia, 394 U.S. 557, 566, 22 L. Ed. 2d 542 89 S. Ct. 1243 (1969).

increases the chance an unlawful act will be committed "at some time in the future.""[126] Without a direct connection between virtual images of child pornography and any resulting child abuse, the government may not ban them.[127] The Court also rejected the government's claim that banning virtual images was necessary to eliminate the market for pornography produced using real children. First, the Court determined that "if virtual images were identical to illegal child pornography, the illegal images would be driven from the market by the indistinguishable substitutes,"[128] because the Court said, pornographers would not risk prosecution by abusing real children, if computerized images would suffice. Second, because there was no underlying crime involved in producing virtual images, the government's market deterrence theory could not justify the CPPA's ban such depictions.[129] The Court also rejected the government's claim that the existence of computer-generated images will make it increasingly difficult to prosecute those who produce pornography using real children. Banning protected speech as a means to ban unprotected speech, the Court said, "turns the First Amendment upside down."[130] Finally, the Court rejected the government's reliance on the affirmative defenses provided in the CPPA. The affirmative defense allowed a defendant to avoid conviction for all offenses except possession, by showing that the materials were produced using adults and were not otherwise promoted as depicting

---

[126] *Id.* at 1403, (citing Hess v. Indiana, 414 U.S. 105, 108, 38 L. Ed. 2d 303, 94 S. Ct. 326 (1973)).

[127] *Id.* at 1403.

[128] *Id.* at 1404.

[129] *Id.*

[130] *Id.*

real children. Shifting the burden to the defendant to prove his speech is lawful, the Court said, "raises serious constitutional difficulties."[131] The Court found it would be at least as difficult for the defendant as for the government to prove that no minors were used in producing the images. Finally, the affirmative defense failed because, even if a defendant was able to establish that the images at issue were computer-generated, the affirmative defense provided him no protection.[132]

The Court did leave the door open for a more narrowly tailored prohibition on computer-generated depictions. In his concurring opinion, Justice Thomas discussed what he believed was the government's "most persuasive interest," that persons who possess and traffic in images of real children will escape conviction by claiming that the images are computer-generated.[133] Because the government could not cite a case where a defendant had been acquitted "based on a 'computer-generated images' defense," Justice Thomas joined the majority. He stated, however, were "technology to evolve to the point where it becomes impossible to enforce actual child pornography laws because the government cannot prove that certain pornography images are of real children," the government should be able to regulate virtual child pornography.[134] Where "technological advances thwart prosecution of 'unlawful speech,' the government may well have a compelling interest in...regulating some narrow category of 'lawful speech' in order to enforce effectively laws against pornography made

---

[131] *Id.*

[132] *Id.*

[133] *Id.* at 1406, (Thomas, J., concurring).

[134] *Id.*

through the use of real children."[135] Thus, Justice Thomas would support a narrow ban on computer-generated images that included an adequate affirmative defense, at such time as the government can establish that virtual images are making it impossible to enforce laws against child pornography depicting actual children.

In her dissenting opinion, Justice O'Connor, with whom Chief Justice Rehnquist and Justice Scalia joined, would have upheld the ban on computer-generated images.[136] She found that the ban neither failed strict scrutiny, nor was unconstitutionally vague. Again, a serious concern for her was the "prospect that defendants indicted for the production, distribution, or possession of actual-child pornography may evade liability by claiming that the images attributed to them are in fact computer-generated."[137] Referring to her own examination of computer-generated images before the Court,[138] and the rapid advances in computer-graphics technology, she found the government's concern reasonable. Further, she believed that the Court's precedent made clear that Congress does not have to "wait for harm to occur before it can legislate it."[139] Finally, she rejected the Respondent's claim that the ban on computer-generated depictions was overbroad. The Respondent's, she wrote, have "provided no examples of films or other materials that are wholly computer-generated and contain images that 'appear to be...of

---

[135] *Id.* at 1406-07.

[136] *Id.* at 1407, (O'Connor, J., concurring in judgment, and dissenting in part).

[137] *Id.* at 1409.

[138] *Id.* (concerning computer-generated images provided to the Court by *Amici Curaie* National Law Center for Children and Families, et al., Justice O'Connor said they "bear a remarkable likeness to actual human beings," and that "[a]nyone who has seen, for example, the film Final Fantasy: The Spirits Within, can understand the government's concern.") (citations omitted).

[139] *Id.* (citing Turner Broadcasting System, Inc. v. FCC, 520 U.S. 180, 212, 137 L. Ed. 2d 369, 117 S. Ct. 1174 (1997).

minors' engaging in indecent conduct, but that have serious value or do not facilitate child abuse."[140] Thus, like Justice Thomas, Justice O'Connor would support the government's regulation of computer-generated depictions of child pornography in the interest of effectively enforcing the ban on real images.

Chief Justice Rehnquist, with whom Justice Scalia joined, would have upheld the ban on virtual depictions, including both, depictions of youthful looking actors and computer-generated images. The Chief Justice found that the CPPA could have been construed "to prohibit only the knowing possession of materials actually containing visual depictions of real minors engaged in sexually explicit conduct, or computer generated images virtually indistinguishable from real minors engaged in sexually explicit conduct."[141] Referring to the CPPA's definition of "sexually explicit conduct," the Chief Justice believed the ban would have reached only "hard core" child pornography involving actual sexual activity, and not the "mere suggestions" of sexual activity that the majority found encompassed by the statute.[142] The legislative record, he said, made it clear that Congress intended to target only a narrow class of visual depictions that are 'virtually indistinguishable to unsuspecting viewers from un-retouched photographs of actual children engaging in identical sexual conduct."[143] It is clear from the dissenting opinion that both the Chief Justice and Justice Scalia would support a narrower regulation of computer-generated images that are virtually

---

[140] *Id.* at 1410.

[141] *Id.* at 1414, (Rehnquist, C.J., dissenting).

[142] *Id.* at 1411.

indistinguishable from depictions of real minors engaged in sexually explicit conduct. As the Attorney General predicted, the *Ashcroft* decision has significantly impacted the government's ability to prosecute cases of child pornography.

D. The Impact of *Ashcroft*

The *Ashcroft* decision had a significant adverse impact on child pornography prosecutions.[144] In the Ninth Circuit, for example, prosecutors are only bringing charges in cases where the government can specifically identify the child. This is only a fraction of the legitimate cases. Further, prosecutors in other jurisdictions have declined to bring charges in legitimate cases, citing either the inability to establish the identity of the victim, or the vast resources required to do so.[145] Law enforcement is equally concerned with the potential liability they face for seizing what they reasonably believe to be a record of the sexual exploitation of a child, only to find out that it is, in fact, computer-generated depictions. The difficulties law enforcement face as a result of *Ashcroft*, will likely only increase as computer graphics technology advances and those advances become available to the consumer.

Numerous defendants who had been convicted prior to *Ashcroft* have sought reversal of their convictions on appeal.[146] In addition, several defendants awaiting

---

[143] *Id.* at 1412, (citing United States v. Hilton, 167 F.3d 61, 72 (1999) (quoting S. Rep. No. 104-358, pt. I, p. 7 (1996) (Justice Scalia did not join in this discussion of the statute's legislative record).

[144] *See* 108 Pub. L. 21, 117 Stat. 650 (2003) Subtitle A, *Child Obscenity and Pornography Prevention*, § 501, Findings (9).

[145] *Id.* at Findings (10),(11).

[146] *See* United States v. Pearl, 324 F.3d 1210 (10th Cir. 2003); United States v. Holm, 326 F.3d 872 (7th Cir. 2003); United States v. Lee, 57 M.J. 659 (A.F. Ct. Crim. App. 2002);

sentencing have sought to withdraw their guilty pleas,[147] and sentenced appellants have sought habeas relief in the form of vacating or setting aside their convictions.[148] Several courts have vacated convictions based upon the sections invalidated.[149] Many appellate courts have reviewed the images themselves and found that they were fact of real children,[150] while other courts have refused to substitute their judgment for that of the

---

[147] *See* Reilly, *infra* n.152; (withdraw of guilty plea allowed where allocution did not include admission that defendant knew images were of actual minors); United States v. Morgan, 2002 U.S. Dist. LEXIS 8909 (D.C. Me. May 10, 2002) (the District Court granted motion to withdraw guilty plea to receiving child pornography in violation of § 2252A(a)(2) when motion filed within seven days of *Ashcroft* decision, despite the fact that defendant did not claim the images received fell within definition of subsections invalidated, "because the government bears the additional burden" of proving the images were of real children).

[148] *See* United States v. Oakes, 224 F. Supp. 2d 296 (D.C. Me. 2002) (the District Court denied defendant's habeas motion to vacate, set aside or correct sentence, where defendant failed to raise constitutionality of § 2256(8) during trial or on appeal, though defense was "available" to him, and failed to raise actual innocence claim. The court stated "[i]t is worth noting that the Court has seen the actual pictures at issue in this case and, based on its review of these photos, can safely conclude that defendant would not be entitled to application of the actual innocence exception even if he were, in fact, making that claim."); United States v. Dean, 2002 U.S. Dist. LEXIS 21609, (.D.C. Me. Nov. 5, 2002) (heard by a magistrate, this was a motion for habeas relief pursuant to 28 U.S.C. § 2255, requesting the court to invalidate defendant's conviction based on *Ashcroft* and defendant's belief that images were not actual children. Magistrate found that *Ashcroft* defense was available at time of his trial as the Supreme Court had previously granted certiorari, and by failing to raise at trial, defendant waived. She found also that defendant failed to prove actual, factual innocence which required that he show "it was more likely than not that no reasonable juror would have found him guilty beyond a reasonable doubt if he were tried in conformity with *Ashcroft*).

[149] *See* Pearl, *supra* n.143, (court vacated convictions for transportation and possession of child pornography where general verdict did not specify grounds for conviction and instruction was based upon unconstitutional "appears to be" language, allowing possibility that conviction based upon unconstitutional grounds); United States v. Ellyson, 2003 WL 1194332 (4th Cir.) (evidence that some, but not all depictions were of actual minors; court could not determine which jury based conviction); United States v. Sims, 2002 WL 31013004 (D.N.M.) (reversed conviction where no evidence that actual minor was involved).

[150] United States v. Richardson, 304 F.3d 1061, 1064, and n.4 (11th Cir. 2002); United States v. Kemmerling, 285 F.3d 644, (8th Cir. 2002) (court reviewed images and was convinced beyond a reasonable doubt that images were not virtual child pornography); United States v. Hall, 312 F.3d 1250 (11th Cir. 2002) *cert denied* 155 L. Ed. 2d 502, 123 S. Ct. 1646 (2003); United States v. Lee, 57 M.J. 659 (A.F. Ct. Crim. App. 2002) (having reviewed factual record, court was "convinced of appellant's guild beyond a reasonable doubt").

jury.[151] To date, there are but two published decisions, indicating how courts may apply the *Ashcroft* decision in future prosecutions. In addition to requiring that the government prove that the children contained in the alleged visual depictions were actual minors, at least one court has required that the government also prove that the defendant *knew* the images were of real minors.

III. Recent Developments

A. *United States v. Reilly*

In *United States v. Reilly,*[152] the defendant pled guilty before Judge Patterson to knowingly receiving child pornography in violation of 18 U.S.C. 2252A(a)(2)(a). At trial, Judge Patterson read the following elements to the defendant: (1) that [between the relevant dates] the defendant received child pornography that had traveled in interstate commerce; that the defendant knowingly received such child pornography; (3) that the defendant received the pornography in the Southern district of New York; and, (4) that the defendant knew what he was doing was against the law.[153] Judge Patterson did not inquire during the allocution, whether the defendant knew the images depicted actual minors.[154] Subsequent to the defendant's allocution, the Supreme Court decided *Ashcroft.* Following

---

[151] *See* Pearl, *supra* n.143, ("Our review of the images in this case on appeal, however much they may appear to be actual minors, should not serve as a substitute for the government's burden of proving at trial the depiction of actual minors").

[152] 2002 U.S. Dist. LEXIS 19564 (S.D.N.Y. Oct. 11, 2002) (Patterson, J.) (hereinafter Reilly).

[153] *See* Reilly, 2002 U.S. Dist LEXIS 19564, at 3, (citing trial proceedings, Pl. Tr. 9-10).

[154] *Id.* at 7.

a conference with counsel regarding the impact of *Ashcroft* upon the defendant's plea, Judge Patterson granted a defense motion allowing the defendant to withdraw his guilty plea.

Judge Patterson found that reading *Ashcroft* and the Court's previous holding in *United States v. X-Citement Video*[155] together, the government was required to establish, not only that the defendant knew that the materials depicted minors engaging in sexually conduct, but also that the defendant knew that they were *actual minors*.[156] The government argued on the motion to withdraw the plea that "there was compelling evidence that at least some of the images are real," and that it had informed the defendant how it would prove these images at trial.[157] Evidence that one or more of the images is real, "[h]owever,...is insufficient evidence that the defendant possessed the requisite scienter to [commit the offense]."[158]

B. *United States v. Pabon-Cruz*

United States v. Pabon-Cruz[159] is another case from the Southern District of New York. In *Pabon-Cruz*, a jury found the defendant guilty of "advertising to receive, exchange or distribute child pornography" in violation of 18 U.S.C. §2251(c), and

---

[155] 513 U.S. 64, 130 L. Ed. 2d 372, 115 S. Ct. 464 (1994) (holding that term "knowingly" in 18 U.S.C. § 2252 (a)(1) and (2) modifies the phrase "use of a minor," such that government must prove that a defendant actually knew the materials contained depictions of minors engaged in sexually explicit conduct).

[156] Reilly, 2002 U.S. Dist. LEXIS 19564 at 18.(emphasis added).

[157] *Id.* note 3, at 8, (citing Government's Letter to court, fn 3).

[158] *Id.* note 3, at 8.

[159] 255 F. Supp. 2d 200, 2003 U.S. Dist. LEXIS 1673) (S.D.N.Y. Feb. 4, 2003) (Lynch, J.) (hereinafter Pabon-Cruz).

"receiving or distributing child pornography" in violation of 18 U.S.C. § 2252A(a)(2)(B). Following the conviction, the defense moved for a judgment of acquittal, claiming that there was insufficient evidence produced at trial to prove that the defendant knew the images depicted actual children.[160] Following a lengthy discussion of the sufficiency of the evidence, Judge Lynch denied the motion. Regarding the charge of knowingly receiving or distributing child pornography, Judge Lynch determined, as Judge Patterson had, that "knowingly" modifies not only the nature of the materials and the age of the actors, but also whether the actors are actual minors.[161] "For [that] reason[]," he said, the jury was instructed that to convict the defendant of knowingly receiving or distributing child pornography, the government must prove that he "knew that the child pornography depicted at least one minor, that is, *an actual person* under the age of eighteen, and knew the general nature, character, and content of the child pornography."[162] The court then highlighted the evidence presented to the jury that could permit it to find that the defendant knew the materials contained depictions of actual children. First, the government read a stipulation of fact to the jury that various photographs "depict actual children.... They are not digital or virtual creations and are not computer generated images."[163] The stipulation, however, did not address the defendant's knowledge that the depictions were of actual children, and the prosecution did not present direct evidence that he knew the images were of real children. On this note, Judge Lynch reminded that "direct proof of knowledge is not

---

[160] *See* Id.

[161] *Id* at 2.

[162] *Id.* (citing Trial Transcript ("Tr." 444)) (emphasis added).

[163] *Id.* at 3, (quoting "Gov't Exhibit ("GX") 5.)).

required.... Proof beyond a reasonable doubt may be made out by circumstantial evidence...." Indeed,...since direct access to the contents of a person's mind is rarely available, knowledge in criminal cases is usually proved in precisely that way."[164]

The circumstantial evidence before the jury included over 500 photographic files and some 200 video files. On this note, Judge Lynch stated: "no rational person could believe that all of these images were simulated or virtual."[165] In addition, the image files were neatly organized into categories – "indicating that the proprietor was familiar with the files it contained."[166] From the organization alone, the jury "could easily have concluded that Pabon had personally examined and indexed a great deal of the material on his computer, and thus was aware of the images it contained."[167] The images themselves served as evidence that the defendant knew they depicted actual children. First, it was obvious to the court that in some of the images, measures were taken to hide identifying features of some of the children or adults, "permitting the inference that the events depicted were actual abusers concerned lest they be identified and prosecuted...."[168] Second, it could be inferred from some of the objects found in the photographs, that they were created a long time ago, prior to digital technology. Finally, the court said that the images were "sickeningly real," and that "nothing about these shocking images would suggest in any way to the reasonable observer that the images did not depict actual children."[169] While the

---

[164] *Id.* at 3.

[165] *Id.*

[166] *Id.*

[167] *Id.*

[168] *Id.*

[169] *Id.*

defendant was free to argue at trial that he believed that each of the images he possessed were virtual images, he did not. Even if he had, the jury could have disregarded such an argument, especially when there was no evidence presented that he had ever produced, or even had the knowledge to produce virtual child pornography.[170]

C. A New Knowledge Requirement

The practical result of *Reilly* and *Pabon-Cruz* is that most courts will now require the government to establish, beyond a reasonable doubt, not only that the images, in fact, depict actual children, *but at the time a defendant received, possessed or distributed them, he or she knew they depicted real children.* For cases with facts similar to *Pabon-Cruz*, this requirement may not seem overly burdensome. However, as will be discussed below, for those cases involving less circumstantial evidence, or where a sophisticated defendant intentionally manipulates the images, or intentionally misnames his folders and files, proving that the accused *knew* the images depicted actual children may be impossible.

IV. Proving That Images Depict Actual Children

Law enforcement has several methods by which to determine if the child depicted in an image is a real. First, if there is evidence that the defendant produced the image, they may be able to physically locate the child. Second, they can compare the image to images that exist in one of several databases maintained by federal law enforcement agencies.

---

[170] *See* Id.

Third, they can perform a detailed technical analysis of the image. Despite these methods, there are several means by which a sophisticated child pornographer can thwart law enforcement's efforts to determine if the images are real.

A. Known Victim

1. The Images Themselves

Several courts have allowed the jury to infer from the images themselves that they depict actual children.[171] Other courts have rejected this and required that the government affirmatively prove that the images depict real children.[172] Where there are multiple images of the same, although unidentified child, however, there may be a strong argument that the images are real. "A jury exercising common sense could easily infer that no rational person could believe that all of these images were simulated or virtual."[173] Judge Lynch was referring there to the government's evidence that the defendant *knew* the images depicted real children, however, the same rationale could be used to argue that the images themselves satisfy the government's burden of proving that the images *are real.* Judge Lynch continued, "[w]hile advances in digital imaging technology have arguably made it possible to "fake" human images by creating convincing digital simulations, jurors could draw on their own common sense and experience to recall that the most expensive digital special effects Hollywood can command only rarely generate images that can be confused with live human actors. No reasonable person could have believed that more than a handful

---

[171] *See* United States v. Nolan, *supra* n.72; United States v. Vig, *supra* n.22.

[172] *See* Morgan, *supra* n.147.

of the thousands of photographs and videos that the evidence shows Pabon had collected and distributed could possibly have been produced using such techniques."[174] Thus, even if the prosecution is unable to locate the child, or his or her image in a database, the prosecution may be able to argue that the sheer number of images is probative on the issue of whether the depictions are of real children, or are computer-generated.

2. Physically Locating the Child

Oftentimes, the individual images of child pornography that a child pornographer receives are unrelated to one another and arrive as part of a download of multiple images from a website or bulletin board. When this is the case, it may be impossible to identify the individual children in the images without referencing one of the existing databases, discussed in detail below. Occasionally, there are multiple images of the same child. Again, without more, the child will likely only be identified with reference to one of the databases. In a small number of cases, however, where there are numerous images of the same child and evidence that the offender produced the images, it is possible, through traditional investigative methods, to locate and identify the child. If law enforcement finds evidence that the offender produced one or more images, they may obtain a warrant to photograph the offender's home, noting the location of the computer, the layout of the home and each room of the house. Bedding and towels, as well as lingerie, should be displayed and photographed. The alleged images can then be compared to the offender's

---

[173] *See* Pabon-Cruz, at 8.

[174] *Id.*

home in attempt to match rooms, furniture, bedding and even clothing that may appear in the images.[175] Where the depictions appear unrelated, or there is no evidence that the offender produced them, the only means to identify the child, if at all, may be by reference to one of the existing databases.

3. Locating the Image in a Child Pornography Database

Several federal law enforcement agencies maintain databases of known images of child pornography, including the FBI, the Customs Service, the Postal Service and the National Center for Missing and Exploited Children.[176] The government began cataloging images in an attempt to positively identify the children depicted and determine their age at the time the image was created. This helped authorities locate child victims and prosecute their abusers. It also assisted law enforcement and prosecutors in subsequent cases by providing a means to prove that a minor was used in the production of the image.

On January 24, 2003, the Customs Service began operating a new national database as a cooperative effort with the National Center for Missing and Exploited Children

---

[175] The author was involved as a prosecutor in one such case where the defendant possessed approximately two-hundred images depicting an adult male raping and sodomizing a five to six-year-old female. Based on information that he likely produced the images, law enforcement obtained a warrant, photographed his home, as well as numerous items of clothing and bedding. Several rooms, including the bathroom and bedroom, as well as several articles of clothing that the child wore in the images, matched what was found in the offenders' home. With this information, law enforcement canvassed the community with an image of the child's face and located her. Subsequently, law enforcement obtained another warrant authorizing them to photograph the defendant, and ultimately identified him as the adult male in the pornographic depictions.

[176] *See* Ly, Phuong, *Girls Teach Teen Cyber Gab to FBI Agents*, THE WASHINGTON POST, No. 181, Wednesday, June 4, 2003, page A1, A8.

(NCMEC).[177] The new database was established in response to *Ashcroft*, which, as discussed, now requires that prosecutors prove that the images are of real children. The new database consists of all known child pornography images, and one of its primary goals is to aid prosecutors by establishing that the photos are of actual minors.[178] The new program first transfers a graphic file, such as a ".jpg" file to a "hash" file with a unique numerical value. This "hash" file and the numerical value it contains, corresponds to a specific, individual image. One of the benefits of using a "hash" file is that the numerical values take up significantly less resources on a computer hard drive or server than the actual graphic file. Also, by using advanced "image-comparison" software, a computer can quickly compare "hash" files and determine whether an image exists in the database, and ultimately whether the individual depicted in the image has been identified by law enforcement.[179] Finally, a "hash" file better protects the privacy of the victim involved, because it does not contain their identity, but rather identifies a law enforcement agent or entity that can establish that the victim exists and that victim's age at the time the image was created.[180] Once it is determined that an image exists in the database, law enforcement can then contact the agent or agency identified and obtain information concerning the victim's age.

Since *Ashcroft*, this database is being used to assist law enforcement and prosecutors by confirming that the images of child pornography at issue in their cases

---

[177] Lee, Jennifer, *High Tech Helps Child Pornographers and Their Pursuers*, NEW YORK TIMES, February 9, 2003.

[178] *Id.*

[179] *Id.*

depict real minors. This is accomplished by one of two ways. First, through a law enforcement agent with personal knowledge that the child victim exists, and that the depiction was created when that child was a minor. In addition, the database is being used to date images of child pornography. As will be discussed below, one of the methods of proving that an image depicts real children is to establish that the image predates software capable of computer-generating the image. Law enforcement can accomplish this by establishing that the image has existed in the database since a time prior to the software.

There are, however, several significant limitations on law enforcement's ability to "hash" a graphic file, compare it to the images maintained in the database, and ultimately identify the individual depicted as real child. To use the image-comparison program, law enforcement must convert the alleged images from their graphic file format into a "hash" file format, consisting of a numerical value. Once this is accomplished, the computer program can quickly scan the database for a matching "hash" value. A "positive hash" means that the program has positively matched the alleged image to an image in the database. A "negative hash" means that it has not. It is possible however, for the database to contain the same image, but for the program to report a negative hash. This is because any modification of the image after it is originally entered into the database, changes its numerical "hash" value. Slight changes to the image's size, contrast, brightness, color distribution, or the addition of any border, descriptive text or label, will result in a different numerical "hash" value and prevent the program from matching the original and the modified images. Thus, while the computerized "hash" program may allow law

---

[180] *Id.*

enforcement to quickly establish that an image exists in the database, the program may be defeated by simple modifications to the image. Another limitation to using the database is the fact that, even if law enforcement are able to obtain a positive "hash," it is very likely that the child depicted in the image has not been identified. Of the "hundreds of thousands" of images of child pornography available on the Internet, only approximately one hundred victims have been positively identified.[181] Thus, law enforcement can only identify a small fraction of the children depicted in images maintained in the database. In summary, while reference to a database can be a useful resource for law enforcement attempting to determine if an image depicts a real child, it leaves a large amount of real children unidentified, and it may be rendered ineffective by subsequent manipulation of the images.

B. Establishing That Image Predates Computer Generation Software

One way of proving that an that an image depicts a real minor is by establishing that the image could not have been produced by any other means. Specifically, the government establishes the earliest date that the image was known to exist, and that that date precedes the earliest computer technology capable of artificially producing the image. To establish when an image was first known to exist, the government can present evidence regarding the date of the images' first production, circulation or publication, or that the image was maintained by one of the databases on a certain date. In *United States v.*

---

[181] *See Threats Against the Protection of Children: Hearing of the House Crime Subcomm., of the House Judiciary Comm.*, 107th Cong., (2002) (testimony of Mr. William C. Walsh, Lieutenant of Police and Family Support Division, Dallas Police Department available at LEXIS, Federal Document Clearing House Congressional Testimony.

Guagliardo,[182] for example, the government called a mail inspector to establish that the images at issue were contained in magazines, published and carrying copyright dates as early as the 1970s.[183] Other courts have allowed law enforcement and other officials sufficiently familiar with a relevant database, to testify that an image was included and has been maintained as part of the database since a specific date.[184]

It can be more difficult, however, for the government to conclusively establish when technology existed to manipulate or create digital images, and when it was "available" to the average consumer. In *Guagliardo,* for example, the court determined that such technology had not been developed and available in the 1970s. A witness with expertise in the computer graphics industry should be able to testify when this technology was developed and when it was first made available to the consumer. Experts, however, often do not agree on the date that the technology was first developed, who developed it, or on the meaning of "available."[185] Thus, the issue can easily result in a battle between government and defense experts, confounding the government's ability to eliminating technology as a potential source of the images.

C. Conducting a Technical Examination of The Image

If the government cannot physically locate the child, cannot determine that the image exists in a database, or cannot establish that through an expert that the image

---

[182] 278 F.3d 868 (9th Cir. 2002) *cert denied* U.S. v. Guagliardo, 2002 LEXIS 8139 (U.S. Nov. 4, 2002).

[183] *Id.*

[184] *See supra* n.11, (testimony of Daniel Collins).

[185] *See* Id.

predates computer-generation software, they can still perform a detailed technical analysis of the image in an attempt to establish that depiction represents real minors. This comprehensive and technical analysis of the image includes involves using filters that highlight lighting, contrast, color and depth, as well as a detailed examination of the image, which attempts to determine how it was produced.[186] As one would expect, such a detailed analysis of an image is expensive and time consuming. Further, there are methods by which to manipulate an image, such that even a forensic examiner may not be able to conclusively determine if it depicts real children.

Initially, the forensic examiner conducts and Overall Visual Examination of the image. This consists of getting an overall impression of the image, examining picture elements, shadows, highlights, reflections and entropy. Following the Overall Visual Examination, forensic examiners conduct Tool-Aided Examinations, utilizing several filters that enhance the lighting, texture, edges and colors contained in an image. Next, an examiner will conduct a Detail Visual Examination, looking for graphics details that appear within an image. Finally, the examiner conducts a File Metadata Examination, looking for clues as to how the image was produced.

1. Overall Visual Examination

An overall visual examination refers simply to the examiner obtaining a general impression of the image, based on his or her review of picture elements, shadows,

---

[186] Interview of Mr. Donn Flynn, Chief Counsel, Department of Defense Computer Forensics Computer Lab, Linthicum, Md., Mar. 2003, (includes twenty-six-slide PowerPoint presentation, current as of Jan. 13, 2003, on file with the author).

highlights, reflections and entropy.[187] Even to the naked eye, computer-generated images often appear artificial. Body parts may appear out of proportion, shadows and highlights exaggerated and reflections inconsistent. This general impression provides the examiner with a starting point to conduct more detailed analyses.

2. Filtering

A Lighting Enhancement Filter is used to "detect and enhance lighting inconsistencies."[188] A photograph of a real person, whether taken by a traditional camera or by a digital cameral, will show natural lighting coming from multiple angles. In contrast, any lighting made to appear in a computer-generated image is added by its creator using computer graphics software. This added lighting is typically inconsistent, in that lighting on the face will appear to be coming from the front, where as lighting on the arms or torso will appear to be coming from the side.[189] In addition, while human hair will naturally reflect light, the hair found in many computer-generated images, especially dark colored hair, does not reflect light. To a trained computer forensic examiner, these inconsistencies in lighting can distinguish whether the image was created by photographing a real person, or by computer graphics software.

A Texture/Depth Enhancement Filter is used to create a three-dimensional representation of an image. Once the 3-D representation is produced, a forensic expert can evaluate the texture and depth of the image. The texture and depth of an individual's skin

---

[187] *Id.* (slide 17).

[188] *Id.* (slide 18).

and clothing in a real image appear natural and consistent, whereas the texture of a computer-generated image will appear flat and smooth.[190] An Edge Enhancement Filter is used to enhance changes between light and dark, most commonly the edges that appear along facial features and between face and hair, or between an individual and the background of the image.[191] Minute changes in the skin tone of a real person will appear randomly skewed, while those same changes in a computer-generated image will appear evenly graduated throughout the image.

A Color Filter creates a histogram of the value of each color found in an image. An examiner looking for the color red, for example, creates a histogram of the red values present in an image. A histogram of the red values of a real image will show that the color appears throughout the image, although the values of the color may. In contrast, a histogram of a computer-generated image will often indicate that an entire color is missing from the image.[192] A Detail Visual Examination, which equates with looking at each image under a microscope, may reveal numbers, initials or in some cases symbols, intentionally embedded in computer-generated images by the author, often as a type of signature or identifying mark.[193]

---

[189] *Id.*

[190] *Id.* (slide 19).

[191] *Id.* (slide 20).

[192] *Id.* (slides 21-22).

[193] *Id.* (slide 23) (in the example provided, which was a computer-generated image of an adult female, the creator of the computer-generated image embedded a "smiley face" into the image).

3. File Metadata Examination

Finally, a File Metadata Examination involves examining the image, not as a visual or graphics file, but as a text file. This examination may reveal information embedded in image itself as to how it was produced, including the brand name of the digital camera used to take the photograph, the brand name of the software used to crop or modify the image, or the brand name of the computer software program that was used to create the image.[194]

A detailed technical examination of an image may still not be able to conclusively prove that an image is real or is computer-generated. This is because many of the images of child pornography that exist on the Internet have been copied, cropped, zipped, unzipped, uploaded and downloaded so many times that a detailed examination provides little or no useful information to the examiner. This situation may be exacerbated when the image was originally a photograph, which was then scanned into a computer graphics file. The fact that most images experience some type of alteration in this fashion, provides the defense an opportunity to suggest that the image is either computer-generated, or that the image was manipulated and therefore, that the source of the image cannot be conclusively determined.[195] For that reason, "the Government cannot always safely rely on the photograph alone to meet its burden...that the image depicts a real child."[196] The government's ability to establish beyond a reasonable doubt that an image depicts an actual minor can be a difficult one. This burden likely pales in comparison, however, to the

---

[194] *Id.* (slide 24.)

[195] *See supra* n.11.

[196] *Id.*

government's burden of establishing that the defendant *knew* the images depicted real children.

V. Proving the Defendant Knew The Images Were Real

A. Standard and Burden of Proof

As the Court determined in *X-Citement Video*, the term "knowingly" in § 2252, modifies both the sexually explicit nature of the materials, and the age of the performers.[197] As discussed above, recent courts have extended the knowledge requirement to the fact that the minors depicted were real. This new requirement becomes an element of the offense and as such, the government must establish – and the jury must find – beyond a reasonable doubt, that the defendant knew that the images depicted *actual* minors when he possessed, received or distributed the images.[198] This begs the question as to what quantum of evidence is sufficient to show that the defendant knew the images depicted real children. Is it enough for the government to show that the defendant *should have known* the children depicted were real? That *he was aware* the children depicted were real? Or, does the government have to establish that he *actually knew* the images depicted actual children? *Reilly* seems indicate the latter, quoting Chief Justice Rehnquist's dissent in *Ashcroft*, that the government would have to prove that a person "actually knew" the materials contained depictions of actual minors,"[199] and later stating that to be convicted, a defendant "must

---

[197] *See* X-Citement Video, 513 U.S. at 78.

[198] *See* Id., *See also* Reilly *supra* n.152, and Pabon-Cruz, *supra* n.159.

[199] Reilly, at 16, (citing quotation from Chief Justice Rehnquist's dissent in Ashcroft, 122 S. Ct. at 1413-14).

know that real minors were the subject of the visual depictions."[200] *Reilly* rejected the government's claim that to establish scienter, the government need only prove that the defendant knew that "the items depict minors and [has] a general knowledge that the material is sexually oriented." In contrast, *Pabon-Cruz*, held that the government must show that the defendant "was aware" that the material had been produced using real children.[201] Practically, the difference may only be a matter of semantics. Some courts will find that the government satisfies its burden to show that the defendant knew the images were real, simply by proving that they are, in fact, real and then providing them to the jury.[202] Other courts, like *Reilly*, will require the government to produce evidence, in addition to images of actual children, to show the defendant knew the images were real. In either case, any relevant and admissible evidence concerning the defendant's sexual predilection towards children, or images of children, will likely satisfy the court and allow the government to argue to a jury that the images depict actual children. Whatever the amount of evidence a court will ultimately require the government to proffer in order to get to the jury, it is almost certain that it will take the form of circumstantial evidence.

B. Circumstantial Evidence of Knowledge

Unless the defendant pleads guilty to the offense, or stipulates that he knew the images depicted real children, there likely will be no direct evidence regarding

---

[200] *Id.* at 17.

[201] *See* Pabon-Cruz, at 5.

[202] *See* United States v. Deaton, 328 F.3d 454, (8th Cir. 2003) (per curiam) (citing United States v. Vig, *supra* n.22, at 449-50) (juries conclusion that images depicted real minors was proper where images were only evidence government presented on the subject).

knowledge that the images depicted actual minors. Circumstantial evidence that the defendant knew the images depicted actual children can come in several forms, including evidence recovered from the defendant's computer, information recovered from an Internet service provider, and non-computer-based information and communications.

Images, even deleted images, can be recovered from a computer hard drive, or other electronic media. Software programs exist, which allow forensic examiners to recover text files, graphic files, and even portions of a file, from a computer storage device. The images of child pornography recovered are helpful, even if law enforcement cannot identify or otherwise authenticate the image, because they may identify the original source of the image. In addition to reviewing the image files, forensic experts can review the computer's internal logs and web browser logs to identify which web site addresses the defendant visited, and whether or not the defendant viewed or downloaded any images from those addresses. In addition, examiners can locate text files, again even those that have been deleted. Text files that contain stories or descriptions of sexual activity between children, or between children and adults, depending on the facts and circumstances of the case, may be evidence that the defendant knew the images depicted real children.

A computer's user settings and the settings of the Internet web browser software may provide information concerning the defendant's favorite web sites and the people he communicates with. Reviewing these web sites and communications may reveal whether the defendant has an interest in real children. User logs for chat room correspondence and e-mail communications may also allow examiners to identify where and when a

message was sent and to whom, the contents of the message and whether any files, graphic or text, were exchanged in the communications. Reviewing the contents of the communications and images may provide evidence as to knowledge.

Internet Service Providers, (ISPs) maintain maintenance logs, typically for a period of ninety days. These logs allow the ISP to assess equipment efficiency and identify the cause of malfunctions occurring with their server or other equipment. These maintenance logs can provide a wealth of information to law enforcement. If the defendant used the ISP to access the Internet, for example, the ISP's maintenance logs will contain a detailed listing of when he accessed the Internet, where he accessed it from, which web sites he visited, whether he viewed or downloaded any text or graphic files and any chat or e-mail communications he sent or received. As discussed above, some or all of this information may provide evidence concerning whether the defendant knew the images depicted actual children. Finally, law enforcement can look for non-computer-based evidence of the defendant's predilection for children. These can include reading materials describing or promoting the sexual abuse of children, membership in organizations, that promote, support or condone sex between children and adults, as well as prior convictions for sexually related offenses against children. There are measures, however, that a sophisticated child pornographer can take to make it appear that his interest lies only in virtual images.

C. Thwarting Law Enforcement

It is possible that a sophisticated child pornographer can thwart the government's ability to prove that he *knew* that the images depicted real children, despite the government's success in establishing that images depict actual children.[203] First, the pornographer can label all of his computer folders, subfolders and individual files as "virtual," i.e., "virtual8yrold," or "virtualteen." Second, the pornographer can purchase and load computer graphics software, possibly attend a graphics class at a local college and purchase books on computer graphics or subscribe to a computer graphics newsletters or magazines. He might leave these computer graphics materials and publications around his computer workstation, where they would be in view of any law enforcement conducting a search. Finally, in any correspondence requesting, offering or discussing pornographic images, he can refer to the images or depictions as "virtual," or computer-generated." The major issue at trial will be whether the defendant *knew* the images he possessed were real, or whether he was only interested in virtual depictions and received any real images by mistake. By taking the measures described above, the defendant arguably creates an inference that he was interested only in "virtual" images of children, and that any real images he received was only by mistake. This "mistake defense" could challenge the government's ability to prove he had knowledge the images depicted real children. It is plausible, when one considers that government computer experts have testified that there

---

[203] Orin Kerr, *Computer Crime Case Update,* May 2, 2003) (the author is an associate professor of law at The George Washington University Law School. He sponsors a weekly Computer Crime Case Update for students and other computer crime professionals. The ideas expressed in this section are based on thoughts expressed by professor Kerr on May 2, 2003, following a discussion of the *Reilly* and *Pabon-Cruz* decisions).

was no way to determine whether or not an image depicted a real person.[204] Faced with the *Ashcroft* decision, and potential factual scenarios as described above, Congress soon went to work to restore the government's ability to regulate virtual images of child pornography.

VI. The PROTECT Act of 2003

On April 30, 2003, President Bush signed into law the Prosecutorial Remedies And Tools Against The Exploitation of Children Today Act of 2003.[205] The purpose of the PROTECT Act included "restoring" the government's ability to successfully prosecute child pornography cases.[206] The Act is Congress' response to the Supreme Court's *Ashcroft* decision, striking portions of the CPPA, and amends several laws aimed at protecting children. Specifically, the PROTECT Act amends 18 U.S.C. § 2252A to include prohibitions on advertising or promoting *obscene* visual depictions of minors engaging in sexually explicit conduct, whether or not the images depict real children,[207] and knowingly providing a minor with actual or virtual depictions of minors engaging in sexually explicit conduct for the purpose of persuading the minor to engage in illegal activity.[208] The Act also revises the definition of child pornography in § 2256(8)(B) to include computer-generated images of graphic sexually explicit conduct that are indistinguishable from that of a minor engaging in sexually explicit conduct, and defines the terms "graphic,"

---

[204] *See e.g.*, United States v. Fox, 248 F. 3d 394, 403 (5th Cir. 2001).

[205] The PROTECT Act of 2003, Pub. L. 108-21, 117 Stat. 650 (2003).

[206] *See* S. Rep. 108-2, Chap. I, 108th Cong., 1st Sess., (2003).

[207] *Id.* at §503(1).

[208] *Id.*

"indistinguishable," and "sexually explicit conduct," as they relate to computer-generated images. The Act also provides an additional affirmative defense for a defendant that can show that the depictions were not produced using actual minors. Finally, the Act adds a new section, 18 U.S.C. § 1466A, specifically criminalizing obscene child pornography.

A. Obscene Visual Depictions are Child Pornography

The revised §2252A completely replaces subsections (a)(3)(A) and (B). The prior subsections banned the sale of, or possession with intent to sell, visual depictions of a minor engaged in sexually explicit conduct. These offenses are essentially encompassed by the remaining subsections (a)(1), (a)(2) and (a)(4) and the new subsection (a)(3), and thus, their deletion does not significantly change the statute. The new subsection (a)(3)(A) bans knowingly reproducing child pornography with the intent to distribute it through the mail or interstate commerce, and the new subsection (a)(3)(B) bans advertising, promoting, distributing and soliciting through the mails or interstate commerce, "any material or purported material in a manner that reflects the belief, or that is intended to cause another to believe, that the material is, or contains – (i) an obscene visual depiction of a minor engaging in sexually explicit conduct; or (ii) a visual depiction of an actual minor engaging in sexually explicit conduct."[209] Congress, by adding the section, effectively bans everything but the possession of essentially all images of child pornography – those that were produced using actual minors, and those which the government can prove are obscene. The new section appears to comport with the Court's

---

[209] 18 U.S.C. § 2252A(a)(3)(A), (B).

requirement in *Ashcroft* that in order to regulate child pornography, Congress must satisfy the requirements of either *Ferber* or *Miller*. An argument can be made, however, that by banning "purported material," the new section goes too far, "in that it criminalizes speech even when there is no underlying material at all – whether obscene, non-obscene, virtual or real, child or adult."[210] That Congress chose not to ban the possession of obscene visual depictions is likely recognition of the Court's warning in *Stanley v. Georgia*[211] that the government has no business dictating what a man can read in the privacy of his own home. In addition to rewriting subsection (a)(3) to ban obscene visual depictions, Congress added a new subsection prohibiting providing certain images to minors.

B. Prohibiting The Use of Virtual Child Pornography to Seduce Children

During *Ashcroft*, the government argued that virtual pornography should be banned because pedophiles and child molesters use it to groom, or seduce children to engage in sexually explicit activities.[212] By showing a child photographs or depictions of other naked children, or children involved engaged in sexual activity with another child or an adult, it was argued, an offender can lower the inhibitions of the child and entice them to participate in the same activities. The Court, labeling the seduction of children as a "secondary concern," rejected the government's argument, reminding instead that the government is

---

[210] S. Rep No. 108-2, Attach. B, at 32,33 (2003) (statement of American Civil Liberties Union, Feb. 5, 2003, to Sen. Leahy, concerning proposed § 2252B of S. 151, which was enacted as § 1466A).

[211] *See supra* n.125.

[212] *See Ashcroft*, 122 S. Ct. at 1402.

free to prohibit an adult from providing "unsuitable materials" to minors.[213] The new subsection (a)(6) appears to be Congress' response to the Court's invitation. It prohibits providing to a minor *any* "photograph, film, video, picture, or computer-generated image or picture," which is, or "appears to be" of a minor engaging in sexually explicit conduct, for the purpose of "inducing or persuading" the minor to engage in illegal activity.[214] The section requires that either that the depictions traveled in the mail or interstate commerce, were produced by materials that traveled in the mail or interstate commerce, or that providing the materials to a minor involved the use of the mails or interstate commerce. Based on the *Ashcroft* decision, this new subsection should withstand judicial scrutiny.

C. Computer-Generated Depictions are Child Pornography

The PROTECT Act amends § 2256(8) by rewriting subsection (B) to read as follows: "such visual depiction is a digital image, computer image, or computer-generated image that is, or is indistinguishable from, that of a minor engaging in sexually explicit conduct."[215] With respect only to the new subsection (8)(B), "sexually explicit conduct" is defined as:

> (i) "graphic sexual intercourse, including genital-genital, oral-genital, anal-genital, whether between persons of the same or opposite sex, or lascivious simulated sexual intercourse where the genitals, breast, or pubic area of any person is exhibited;

---

[213] *Id.* (citing Ginsberg v. New York, 390 U.S. 629, 20 L. Ed. 2d 195, 88 S. Ct. 1274 (1968)).

[214] Pub. L. 108-21, 117 Stat. 650, 680 § 503(1), (2003) (enacted as 18 U.S.C. § 2252A(a)(6)) (emphasis added).

[215] Pub. L. 108-21, 117 Stat. 650, § 502(a).

(ii) graphic or lascivious simulated;
(I) bestiality;
(II) masturbation; or
(III) sadistic or masochistic abuse; or

(iii) graphic or simulated lascivious exhibition of the genitals or pubic area of any person.[216]

Two new definitional sections provide that "graphic" means "that a viewer can observe any part of the genitals or pubic area of any depicted person or animal during any part of the time that the sexually explicit conduct is being depicted;"[217] and "indistinguishable" means "virtually indistinguishable, in that the depiction is such that an ordinary person viewing the depiction would conclude that the depiction is of an actual minor engaged in sexually explicit conduct." This definition does not apply to depictions that are drawings, cartoons, sculptures, or paintings depicting minors or adults.[218] The Act maintains the existing subsection (8)(C) pertaining to "morphed" images of real children, which was not challenged in *Ashcroft,* but removes completely subsection (D), which *Ashcroft* invalidated, and that had banned depictions advertised or promoted in a manner that "conveys the impression" that the images are addressing maintains the prohibition on depictions involving real children.[219] Thus by amending § 2252A as it has, Congress continues to ban depictions involving real minors and "morphed" images involving the use of an identifiable minor, and more narrowly bans computer-generated images, by requiring that such images contain *graphic* depictions of a minor engaged in sexually explicit conduct and that the

---

[216] *Id.* at § 502(b).

[217] *Id.* at § 502(c) (enacted as new §2256(10)).

[218] *Id.* (enacted as new § 2256(11)).

depictions be *virtually indistinguishable* to an ordinary viewer, from similar depictions of actual minors. Finally, the revised § 2252A also adds a new affirmative defense, which Justice Thomas in his concurring opinion, suggested might save a narrower ban on virtual child pornography from constitutional attack.[220] Some feel that the new affirmative defense is unnecessary, may swallow-up completely the ban on computer-generated images of child pornography, actually making them legal to produce, distribute and possess.[221] Others believe the affirmative defense is inadequate because it still fails to protect innocent defendants.[222]

D. The New Affirmative Defense

The Act added an affirmative defense to § 2252A, allowing a defendant to escape conviction where he can show that the images are completely computer-generated.[223] The affirmative defense requires that the defendant provide the government with notice of his intent to assert such a defense not later than ten days before trial, and provide the substance

---

[219] *Id.* at § 502(a).

[220] *See Ashcroft*, 122 S. Ct. at 1407 (Thomas, J., concurring).

[221] *See* Taylor, Bruce, *Delete Defense (C)(2): An Open Letter to Congress, The Attorney General and The Public, From Bruce Taylor, Former Prosecutor And Now Chief Counsel of The National Law Center for Children and Families, In Opposition to New Affirmative Defense "(C)(2)" In the Virtual Child Porn Bills Which Could Actually Legalize A Computerized Porn Industry*, March 10, 2003, THE NATIONAL LAW CENTER FOR CHILDREN AND FAMILIES, (available on line at http://www.nationallawcenter.org/NLC% 20open%20letter %20to%20Congress%20on%20virtual%20child%20porn%20bills.htm); *See also* David Brody, *Groups Question Virtual Child Porn Bill,* FAMILY NEWS IN FOCUS, Feb. 25, 2003, (available on line at http://www.family.org/cforum/fnif/news/a0024904.html).

[222] *See* S. Rep No. 108-2, Attach. B, at 32,33 (2003) (statement of American Civil Liberties Union, Feb. 5, 2003, to Sen. Leahy, concerning proposed § 2252B of S. 151, enacted as § 1466A).

[223] *See Id.* at § 502(c) ("It shall be an affirmative defense to a charge of violating paragraph (1), (2), (3)(A), (4), or (5) of subsection (a) that – (1)(A) the alleged child pornography was produced using an actual person or persons engaging in sexually explicit conduct; and (B) each person was an adult at the time the

of any evidence or expert testimony upon which he may rely. Failure to comply with the notice requirements can bar a defendant from asserting the defense. The affirmative defense is not available for offenses involving "morphed" images, where identifiable minors are made to appear as engaging in sexually explicit conduct.[224] This appears to be a logical exclusion, as in any prosecution involving a morphed image, the prosecution will have to establish that the depiction involves an "identifiable minor."[225] Where the prosecution is unable to establish that an actual minor appears in the depiction, it has the option of charging the image as a computer-generated depiction as defined in § 2256(8)(B), in which case the affirmative defense is applicable. Alternatively, the government could charge the image as an obscene visual representation, in which case the only applicable affirmative defense is for simple possession, where the defendant has less than three images and promptly destroys them or report them to law enforcement. For the same reasons the Court enumerated in *Ashcroft*, the new affirmative defense will likely fail judicial scrutiny.

Few defendant's will be able to avail themselves of the new affirmative defense, even if the images they mailed, transported, shipped or possessed were, in fact, created using computer graphics software and are protected speech. This is because where the defendant is not the author, or creator of such a computer-generated image, he may not

---

material was produced; or (2) the alleged child pornography was not produced using any actual minor or minors.").

[224] *Id.* at § 502(c).

[225] *See* 18 U.S.C. § 2256(9) (an "identifiable minor (A) means a person – (i)(I) who was a minor at the time the visual depiction was created, adapted or modified; or (II) whose image as a minor was used in creating, adapting, or modifying the visual depiction; and (ii)who is recognizable as an actual person by the person's face, likeness, or other distinguishing characteristic, such as a unique birthmark or other recognizable feature; and (B) shall not be construed to require proof of the actual identity of the identifiable minor.").

have any means to prove that the children depicted are actually the creation of someone's mind, and not actual children. The Court addressed this specific issue in *Ashcroft*, and held that shifting the burden to the defendant to prove that his speech is not unlawful, "raises serious constitutional difficulties."[226] Indeed, the government has argued consistently that it is very difficult, even for an expert, to determine whether an image was produced using an actual minor, or computer graphics software. "If the evidentiary issue is a serious one for the government as it asserts," the Court said, "it will be at least as difficult for the innocent possessor."[227] Indeed, Congress found that "technology already exists to *disguise depictions of actual children to make them unidentifiable* and to *make depictions of real children appear computer-generated. The technology will soon exist, if it does not already, to computer-generate realistic images of children.*"[228] Thus, when one adds together Congressional findings concerning the existence of such technology, and the government's repeated claims regarding the difficulty in distinguishing actual images from computer-generated images, there is a strong argument to be made that the new affirmative defense is inadequate to protect an innocent defendant.

E. Child Pornography as Obscene Visual Representations

The PROTECT Act added a new obscenity statute, 18 U.S.C. § 1466A, criminalizing "obscene visual representations of the sexual abuse of children."[229] The

---

[226] *Ashcroft*, 122 S. Ct. at 1404-05.

[227] *Id.*

[228] Pub. L. 108-21, 117 Stat. 650, 676, § 501, Finding (5), (2003).

[229] Pub. L. 108-21, 117 Stat. 650, § 504 (2003).

purpose of the section is to "prohibit[] a narrow category of obscene depictions of minors engaged in "hardcore" pornography involving real or apparent minors."[230] This section prohibits the production, distribution, receipt and possession of materials, including drawings, cartoons, sculptures and paintings, that either: "(1)(A) depicts actual minors and is (B) obscene; or, (2)(A) depicts what appears to be a minor engaging in graphic bestiality, sadistic or masochistic abuse, or sexual intercourse, including genital-genital, oral-genital, anal-genital, or oral-genital, whether between persons of the same or opposite sex; and either minor engaging in sexually explicit conduct; and (B) lacks serious literary, artistic, political, or scientific value."[231] The section's definition for "visual depiction" specifically includes digital images, computer images and computer generated images.[232] In addition, similar to the new definition in § 2256(10), "graphic" means "that a viewer can observe any part of the genitals or pubic area of any depicted person or animal during any part of the time that the sexually explicit conduct is being depicted."[233] It is not a requirement element that the minor depicted actually exist.[234] Penalties for violating the section are those contained in the child pornography statute, § 2252A, and not the lower penalties that apply to obscenity.[235]

The new § 1466A is Congress' attempt to comply with the Court's holding in *Ashcroft*, that any ban on virtual child pornography, must comply with the standard for

---

[230] H.R. Rep. at 62, (2003), *reprinted in* 2003 U.S.C.C.A.N. 683, 697.

[231] Pub. L. 108-21, 117 Stat. 650, 681-682, § 503 (2003) (enacted as new § 1466A).

[232] *Id.* (enacted as new § 1466A(f)(1)

[233] *Id.* (enacted as new § 1466A(f)(3).

[234] *Id.* (enacted as new § 1466A(c).

[235] *See* 18 U.S.C.A. § 2252A(b)(1),(2) (West 2003).

obscenity set out in *Miller*. It also provides an alternative means for the government to prosecute virtual child pornography, should the new ban on computer-generated depictions be successfully challenged in the courts. Section 1466A, however, may also be vulnerable to a court challenge on constitutional grounds. The new section bans two types of depictions, those that depict actual minors engaged in sexually explicit conduct and are obscene; *and* those that depict what appears to be minors engaging in graphic sexually explicit conduct and lacks serious literary, artistic, political or scientific value. The ban on the first type of depiction clearly comports with *Miller*, as the images must be obscene, that is, they must appeal to the prurient interest, be patently offensive and lack serious literary, artistic, political or scientific value. The ban on the second type of images, however, is not so clearly linked to the *Miller* test. Congress apparently chose to substitute its own definitions of "appeals to the prurient interest" and "patently offensive," by instead requiring that the material "depicts an image that is, or appears to be, of a minor engaging in graphic bestiality, sadistic or masochistic abuse, or sexual intercourse, including genital-genital, oral-genital, anal-genital, or oral-anal, whether between persons of the same or opposite sex." This departure from the *Miller* test exposes the new statute to a potentially successful court challenge, by leaving out required elements of the *Miller* test, and thereby punishing speech protected by the First Amendment.[236] Congress, however, is confident that the new §1466A will survive a constitutional challenge, and their position has some support. First, the view of experts in field is that "the vast majority (99-100%) of all child

---

[236] S. Rep No. 108-2, Attach. B, at 29,30 (2003) (statement of American Civil Liberties Union, Feb. 5, 2003, to Sen. Leahy, concerning proposed § 2252B of S. 151, which was enacted as § 1466A).

pornography would be found obscene by most judges and juries, even under a standard of beyond a reasonable doubt in criminal cases."[237] Second, the Court in *Ashcroft* stated that "[w]hile we have not had occasion to consider the questions, we may assume that the apparent age of persons engaged in sexual conduct is relevant to whether a depiction offends community standards."[238] Thus, the Court may grant the government more leeway in banning speech as obscenity, whether the materials, computer-generated or otherwise, depict children engaging in sexual conduct. Still, the fact that all child pornography may be obscene may not save that portion of the statute. As the Court has repeatedly stated, the *Miller* test is the standard for determining obscenity, and Congress is bound to follow it. By "enacting" its own test for obscenity in § 1466A, Congress runs the risk of having a future court invalidate it

VII. Conclusion

Children are often said to be a nation's greatest resource. Few would question that visual depictions of real children engaging in sexually explicit conduct, threatens the nation's children, and society as a whole. In *Miller*, the Supreme Court confirmed that some materials were not entitled to First Amendment protection, setting forth the test for obscenity that remains today. Based on the Court's decision in *Miller*, Congress began combating child pornography in 1977, by criminalizing its distribution. Subsequently, the

---

[237] S. Rep. No 108-2, Attach. A, at 23 (2003) (the Additional Views of Sens. Leahy, Biden and Feingold, citing written response to questions posed to Mr. Dan Armagh, National Center for Missing and Exploited Children. The Senators recognized the Center as the "true expert" in the field).

[238] Free Speech, 122 S. Ct. at 1396.

Court decided *Ferber*, confirming that the government could ban images that recorded the sexual abuse of children, whether or not the images were obscene according to *Miller*, because doing so was a legitimate means deterring the production of the images. Congress' efforts were largely successful, and by the late 1980s, child pornography was reduced to few underground groups trading in antiquated images.

The Internet and advances in computer technology allowed child pornography to flourish in the 1990s. Child pornographers obtained instant access to thousands of images, and could buy, sell and trade from the privacy of their homes. In addition, digital cameras and graphic software programs allowed them to create new images and manipulate old ones. This advancing technology, experts predicted, would soon make it possible to create life-like images of children engaging in sexually explicit conduct. These "virtual" images, Congress found, threatened legitimate prosecutions involving images of real children by allowing the defendant to suggest they were fake. Faced with this proposition, Congress enacted the CPPA, extending the definition of child pornography to include computer-generated images.

The CPPA was challenged by *The Free Speech Coalition* on the same day it took effect. The plaintiffs claimed, among other things, that the statute was unconstitutionally vague and overbroad, because it swept-in protected speech, including depictions produced using youthful-looking adults and depictions created using computer graphics software. The trial court upheld the constitutionality of the CPPA, as several other circuits had done, however, the Ninth Circuit reversed and the Supreme Court affirmed. The Court struck the "appears to be" language contained in § 2256(8), because it criminalized depictions that did

not involve the sexual abuse of children, nor were obscene. The Court rejected the governments secondary reasons for banning virtual images, including encouraging pedophiles to abuse children, that virtual images can be used to seduce children, and that the existence of virtual images makes legitimate prosecutions more difficult. The Court did leave the door open for a narrower proscription on virtual depictions, when the government can establish that virtual depictions preclude enforcement of laws banning actual depictions.

The *Ashcroft* decision had a significant negative impact on child pornography prosecutions. Subsequent court decisions have increased the government's burden, by requiring that they prove, beyond a reasonable doubt, that the images at issue depict real children and that the defendant knew they depicted real children. There are several ways in which the government can prove that an image depicts a real child, including offering the images themselves, locating the child depicted, identifying the child in a federal database, establishing that the image predates technology capable of creating the image, and conducting a technical examination of the image. Each of these methods, however, requires expending substantial time and resources, and each is subject to significant limitation. Judges, for example. may require the government to offer more than the images themselves in order to get to a jury. Physically locating a child victim occurs only in the rarest of cases. Locating an image in a database as a "hash" file requires that the image has not been modified, and even if the image is found, it is likely that the child has not. Proving that an image predates the necessary technology can easily turn a trial into a battle of the experts. Finally, conducting a technical examination of the image can be impeded by

the simple nature of how the images are reproduced and exchanged over the Internet, or by a sophisticated child pornographer attempting to make the images appear computer-generated.

Proving that the defendant knew the images depicted real children is likely an impossible burden for the government to meet. The government can attempt to meet this burden through circumstantial evidence of the defendant's interest in real children. This evidence can include images and text files recovered from the defendant's computer, records of the web sites visited by the accused, records of chat room and e-mail correspondence, as well as records of the defendant's Internet activity maintained by his Internet service provider. Finally, evidence of the defendant's sexual predilection for children may be found in reading materials, memberships in groups that advocate sex with children and prior convictions. A sophisticated child pornographer can, however, confound the government's ability to proved knowledge, by making it appear that his interest is only with virtual images.

Faced with the *Ashcroft* decision and the still rapidly advancing computer technology, Congress responded with the PROTECT Act of 2003. The Act bans obscene depictions of children engaged in sexually explicit conduct. In the Act, however, Congress fails to follow the requirements of *Miller*, and thus, portions of the ban are vulnerable to a constitutional challenge. The Act also prohibits providing *any* depiction of child pornography to minors, and redefines child pornography to include computer-generated images that are graphic depictions of certain sexually explicit activities. The ban on computer-generated images is linked to a new affirmative defense, allowing a defendant to

escape conviction where he can show that the images are, in fact, computer-generated. The affirmative defense, and thus, the ban on computer-generated images is also very vulnerable to a constitutional challenge. The *Ashcroft* Court warned against shifting this difficult evidentiary burden onto the defendant. Despite this warning, Congress has done so and the ban on computer-generated images will likely be invalidated. Finally, Congress enacted what is essentially a "fall-back" position, by banning child pornography as obscenity. The *Ashcroft* Court essentially invited Congress to ban child pornography as obscenity, and indicated that the age of the minor could be a factor in whether an image was obscene. In responding to this invitation, however, Congress chose to substitute its own test for obscenity, leaving out two requirements of the *Miller* test. Congress' departure from *Miller* in determining obscenity, has invited a future court to invalidate it.